

ASSERTIVENESS TRAINING: A META-ANALYSIS
OF THE RESEARCH FINDINGS

BY

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Meta-analytic methodology was used to synthesize research findings concerning the efficacy of assertiveness training. The data for the meta-analysis came from 21 assertiveness training studies reporting 29 behavioral and 36 self-report outcome measures of assertiveness. With an average effect size of .74 for the 21 studies, the findings provided strong evidence for the efficacy of assertiveness training. Converted into percentile terminology, the overall effect size of .74 indicates that on the average a client at the mean of the control group would be expected to move to the 77th percentile of the control group after receiving assertiveness training.

Additional findings of the meta-analysis were as follows:

1. The common core components of assertiveness training were identified as instructions, modeling, behavioral rehearsal, and coaching. Other assertiveness training components (e.g., homework, video feedback) were frequently added to the core components. None of the components was significantly related to treatment outcomes.

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2. The training level, sex, and number of therapists employed in the studies varied considerably. None of the therapist characteristics was significantly related to treatment effectiveness.

3. The most frequently used population was mixed-sex groups of college students. The age level of the subjects was significantly related to treatment effectiveness while the sex of the subjects and the subjects' pretreatment level of assertiveness approached significance. The number of subjects per treatment group was not significantly related to treatment outcomes.

4. On the average, subjects received five to six sessions of assertiveness training over a five to six-week period for a total of eight to nine hours. The length of training was not related to treatment effectiveness.

5. None of the publication features (e.g., year of publication, type of publication) was significantly related to treatment effectiveness.

It was impossible to assess the effectiveness of certain components (e.g., covert rehearsal, cognitive restructuring), the long-term efficacy of assertiveness training, and the effectiveness of assertiveness training with certain populations (e.g., alcoholics, psychiatric patients) because of the lack of investigations dealing with these issues. Recommendations were made for ways to improve the quality of future assertiveness training research. Also, the implications of the findings for clinicians were discussed.

CHAPTER I ✓

INTRODUCTION

Statement of the Problem

The field of behavior therapy has recently witnessed a dramatic increase in the number of clinical applications and research investigations of assertiveness training. The widespread interest in assertiveness training is also demonstrated by the demand of the general public for self-help material detailing how to become more assertive. While most laypersons and professionals are acquainted with assertiveness training, few individuals could accurately describe the procedure or define the concept of assertiveness.

Influenced by Salter's (1949) clinical work with socially inhibited individuals, Wolpe (1958) developed the construct of assertiveness and formalized the procedure called assertiveness training. Assertiveness was defined by Wolpe as "the proper expression of any emotion other than anxiety toward another person" (1973, p. 81). Wolpe advocated assertiveness training as a clinical intervention for persons suffering interpersonal anxiety.

Since Wolpe's groundbreaking work, numerous definitions of assertiveness varying in specificity have been offered (e.g., Alberti & Emmons, 1974; Galassi, Delo, Galassi, & Bastien, 1974; Lazarus, 1973). The most popular definition, and the one that has had the most influence on the assertiveness training movement, was offered by Alberti and Emmons (1974) who invoked the concept of "personal rights" in their construct of

assertiveness. Alberti and Emmons defined assertiveness as "behavior which enables a person to act in his own best interest, stand up for himself without undue anxiety, to express his rights without destroying the rights of others" (1974, p. 2). In their definition, Alberti and Emmons distinguished assertiveness from two other response patterns, non-assertiveness and aggressiveness.

Using Alberti and Emmons' concept of personal rights to identify response patterns, non-assertive behavior was defined as the denial of one's own personal rights by placing the opinions, feelings, and needs of others before one's own. The goal of the non-assertive behaving individual is to appease others and avoid conflict and confrontation at any cost. At the other extreme of behavior patterns is the aggressive style of responding. Aggressive behavior involves directly standing up for one's own personal rights but at the expense of other individuals' rights. For the aggressively behaving individual, emphasis is placed on achieving desired goals and not the manner in which one behaves or how others will respond. Both the non-assertive and aggressive behavior patterns are viewed as ineffective communication styles which seriously affect interpersonal relationships and have negative intrapersonal consequences.

In contrast to the non-assertive and aggressive response styles is the assertive behavior pattern. Assertive behavior involves standing up for one's own personal rights in a direct, honest, and appropriate manner which does not violate other individuals' rights. For the assertively responding individual, emphasis is placed on responding appropriately and not the potential consequences of the assertive act.

To help individuals acquire assertive skills, clinicians and researchers developed assertiveness training packages which incorporated a variety of behavioral-oriented clinical procedures. These techniques included behavior rehearsal, therapist coaching, modeling, homework assignments, video taped feedback, and self-reinforcement. Assertiveness training procedures are designed to teach individuals verbal and nonverbal assertive behaviors using techniques based on operant and social learning principles. More recently, several assertiveness trainers (e.g., Galassi & Galassi, 1978; Lange & Jakubowski, 1976) have incorporated the cognitive strategies of Ellis and Harper (1975) and Meichenbaum (1974) into their training procedures. The proponents of cognitive-behavioral oriented assertiveness training argue that in addition to learning specific assertive responses, individuals should be trained to deal with the cognitive belief structures that may interfere or prohibit assertive responding. While the primary component of assertiveness training packages is usually behavior rehearsal, the combination of assertiveness techniques employed varies greatly and "appears to be determined primarily by convention and personal preference rather than by functional analysis" (Galassi & Galassi, 1978, p. 22).

Following the lead of clinicians, researchers began to investigate the efficacy of assertiveness training. The influence of assertiveness training on self-report and behavioral indices of assertiveness has been assessed for a variety of populations including psychiatric patients (e.g., Hersen, Eisler, Miller, Johnson, & Pinkston, 1973), homosexual men (e.g., Russell & Winkler, 1977), college students (e.g., McFall & Marston, 1970), non-assertive individuals (e.g., Joanning, 1976), and alcoholics (e.g., Scherer & Freedberg, 1976). Also, the separate and

combined treatment effects of such procedures as behavior rehearsal, covert rehearsal, modeling, video taped feedback, coaching, and cognitive restructuring have been assessed for a variety of populations.

While the preliminary findings concerning the effectiveness of assertiveness training appeared quite favorable, the ability to draw definitive conclusions from this body of literature has been hampered by the lack of a standardized training procedure and by the inability of traditional review strategies to effectively synthesize the research findings. Specifically, reviewers of assertiveness training research (Galassi & Galassi, 1978; Heimberg, Montgomery, Madsen, & Heimberg, 1977; Rich & Schroeder, 1976) could not provide a clear synthesis of the research findings because of the inability to directly compare the results of studies utilizing different training procedures. Also, traditional review strategies cannot determine the following information: an estimate of the magnitude of treatment effectiveness, the relationship between various assertiveness training components and treatment effectiveness, and the impact of subject, therapist, and design characteristics on treatment outcomes. Proponents of assertiveness training have paid little attention to these liabilities and have proceeded to view the findings as support for the efficacy of assertiveness training. Thus, the popularity of assertiveness training has continued to expand faster than the research base supporting the procedure.

In summary, assertiveness training is a collection of behavioral and cognitive procedures that are designed to improve individuals' social skills. Assertiveness training originated from clinical work in behavior therapy and is now considered a fundamental tool of most clinicians. The procedure has been widely publicized in the self-help literature and now

has enthusiastic converts in both the professional and public sectors. However, as will be discussed in the next section, questions concerning the efficacy of assertiveness training still remain unanswered.

Purpose of the Study

Since Alberti and Emmons (1974) popularized assertiveness training in their book, Your Perfect Right, assertiveness training has received increasing attention from researchers and clinical practitioners. The growth of assertiveness training as a research area can be illustrated by the increase in the number of entries in Psychological Abstracts dealing with assertiveness training. In 1974, there were approximately 20 articles listed under the heading of assertiveness training while in 1981 the number of entries increased six fold. Though the body of research dealing with assertiveness training has expanded greatly over the last few years, reviewers of this literature have been unable to provide answers to the following questions: How effective is assertiveness training? How frequently are various treatment components employed in assertiveness training programs and how are they related to treatment outcomes? What is the influence of subject, therapist, and design characteristics on treatment effectiveness? The inability to answer these and other related questions conclusively is not due to a lack of investigations but rather the failure of traditional review techniques to synthesize the research findings effectively.

In his presidential address to the American Educational Research Association, Glass (1976) proposed "a rigorous alternative to the casual, narrative discussions of research studies which typify our attempts to make sense of the rapidly expanding research literature" (p. 3). He referred to his review method as meta-analysis, or the analysis of

analyses. Glass described meta-analysis as "the statistical analysis of a large collection of results from individual studies for the purpose of integrating the findings" (1976, p. 3). To employ Glass's technique, researchers must first locate studies dealing with a specific topic by following well defined procedures. Next, the features and outcomes of these studies are coded in quantitative or quasi-quantitative terms. Finally, descriptive statistics and multivariate techniques are used to describe findings and relate study characteristics to outcomes. Since Glass's address, meta-analysis has been used to synthesize the findings in a variety of research areas: for example, psychotherapy outcome effects (Smith & Glass, 1977); open versus traditional education (Peterson, 1979); class size and achievement (Glass & Smith, 1979); and tutoring (Cohen, Kulik, & Kulik, 1982).

Meta-analysis has several clear advantages over traditional integrative reviews (Glass, 1977; Jackson, 1980). First, meta-analysis is a systematic, clearly articulated, and reliable procedure for integrating findings from a set of studies. Second, meta-analysis can use information from studies of varying methodological quality and control for possible biases caused by the differences in the studies. Third, a precise estimate of treatment effectiveness can be calculated. Fourth, meta-analysis can be used to identify the settings and conditions where treatment effects are strongest.

Meta-analysis is particularly useful for integrating the findings of a set of studies that do not contain a standardize treatment procedure, as is the case with assertiveness training research. By using multivariate statistical procedures, meta-analysis can simultaneously investigate relationships among studies' methods, populations of subjects, treatment

variables, design features, and study outcomes. No other integrative review technique is capable of doing this.

The purpose of this study is to utilize meta-analytic methodology to synthesize the research findings concerning the effectiveness of assertiveness training. More specifically, this investigation will be designed to consider the following questions:

1. How effective are assertiveness training procedures? The effectiveness of assertiveness training will be assessed in four ways. First, the overall magnitude of the treatment effect will be estimated. Second, the meta-analysis will estimate the decay of assertiveness training effects over time. Third, treatment effectiveness will be calculated for the different types of assertiveness outcome measures (behavioral or self-report) that were employed. And finally, the meta-analysis will determine the magnitude of the treatment effect produced by studies using different types of control conditions (placebo or no-treatment).

2. What is the contribution of various assertiveness training components to treatment effectiveness? The meta-analysis will determine how frequently these components are used in assertiveness training packages and will estimate the influence of each component on treatment effectiveness. This study will also assess the relative contribution of the following sets of training components (Rich & Schroeder, 1976): response-acquisition operations (instructions, modeling), response-reproduction operations (behavior rehearsal, covert rehearsal), response-shaping operations (coaching, video taped feedback, self-feedback, group feedback), cognitive restructuring techniques (cognitive strategies), and response-transfer operations (homework, bibliotherapy).

3. How are therapist characteristics related to treatment outcomes? The meta-analysis will assess the relationship of the number of therapists per treatment group, the sex of the therapist(s), and the training of the therapist(s) to treatment effectiveness.

4. How are the characteristics of the subjects related to treatment effectiveness? This study will assess the influence of the following subject-related variables on treatment: the subjects' pretreatment level of assertiveness, the number of subjects per group, the subjects' diagnostic classification, the sex of the subjects, and the age of the subjects.

5. What is the relationship between the distribution of training time and the efficacy of treatment? Since assertiveness training can be scheduled in a variety of time formats (e.g., a one-day six-hour workshop or six one-hour sessions scheduled over six weeks), this study will consider the effect that the distribution of training (number of hours, sessions, weeks) has on treatment effectiveness.

6. What are the publication features of the studies reviewed? The various publication characteristics (year of publication, type of publication) of the studies used in the meta-analysis will be recorded and related to outcome results.

In summary, the ability to synthesize assertiveness training research findings has been hampered by the lack of a standardized training procedure and by the limitations of traditional review strategies. Meta-analysis is an alternative approach to the conventional review that is capable of providing quantitative answers to research questions that were previously unanswerable.

Significance of the Study

The findings of this study will have significance for the practitioner and researcher of assertiveness training. For the clinician, the results of the meta-analysis will aid in the training of clients in several ways. First, the meta-analysis will determine whether assertiveness training is an effective training procedure. Second, this study will determine the relative effectiveness of various assertiveness training components. Third, the influence of subject and therapist characteristics on treatment outcomes will be described. Fourth, the findings from this study will help the practitioner develop effective guidelines concerning the scheduling and forming of assertiveness training. And finally, recommendations for developing a more standardized and effective assertiveness training program will be drawn from the results of the meta-analysis.

For the researcher, the results of the meta-analysis will provide a clearer picture of the state-of-art in this research area. By characterizing the tendencies of prior research, researchers will become aware of the deficits of past research and be able to determine where future research efforts should be directed. Also, specific recommendations for further research in assertiveness training will be drawn from the results of the meta-analysis.

In summary, the use of meta-analytic methodology will aid in the synthesis of the research findings concerning assertiveness training. While meta-analysis is not a panacea, it is an innovative technique which will further our understanding of the effects of assertiveness training.

CHAPTER II

REVIEW OF THE LITERATURE

This chapter is divided into two sections. In the first half of the chapter, the following topics pertaining to assertiveness training are reviewed: definitions of assertion, the theoretical formulations of assertiveness, the measurement of assertive behavior, and the efficacy of assertiveness training procedures. The second section focuses on the methodological issues surrounding meta-analytic techniques.

Assertiveness Training

Definition of Assertion

The original definitions of assertion were vague and general. For example, the first psychological definition (Chittenden, 1942) of assertion was "any overt attempt to influence the behavior" (p. 3), or any overt attempt to influence one's own behavior while maintaining one's status in a situation. Other general definitions of assertion have emphasized the expression of feelings and thoughts in an open, honest, and appropriate manner (e.g., Fensterheim, 1972; Serber, 1972). Several authors have used the concept of personal rights to define assertion (e.g., Alberti & Emmons, 1974; Jakubowski-Spector, 1973).

In an effort to refine and operationalize the concept of assertion, clinicians have attempted to describe the specific response classes that constitute assertive behavior. Lazarus (1973) classified assertive behavior into four response patterns: (a) the ability to say no, (b) the ability to make requests, (c) the ability to express positive and

negative feelings, and (d) the ability to initiate, continue, and terminate general conversations. Other authors have identified response classes which include the expression of feelings (Galassi, DeLo, Galassi, & Bastien, 1974) and the ability to initiate and maintain social interactions (O'Connor, 1969).

In their review of assertiveness training research, Rich and Schroeder (1976) incorporated the elements of several previous definitions to form the most specific operationalized definition of assertive behavior to date. Rich and Schroeder view assertiveness as

the skill to seek, maintain, or enhance reinforcement in an interpersonal situation through an expression of feelings or wants when such expression risks the loss of reinforcement or even punishment. . . . The degree of assertiveness may be measured by the effectiveness of an individual's responses in producing, maintaining, or enhancing reinforcement. (p. 1082)

While Rich and Schroeder's definition is primarily aimed at facilitating research, Rakos (1979) contends that its inability to discriminate between assertiveness and aggressiveness severely restricts its utility in clinical settings. Rakos expanded on Rich and Schroeder's definition by viewing assertive behavior as a behavioral chain composed of "rights" and "obligations." According to Rakos (1979),

assertive behavior involves (1) the emission of rights (expressive) behavior, which is the skill to seek reinforcement in an interpersonal situation through verbal behavior when such behavior risks the loss of reinforcement or even punishment; and (2) the emission of functionally related antecedent and subsequent obligation behavior (in our society, analyzing all rights and consequences, developing an appropriate behavioral repertoire, attempting to enhance everyone's reinforcement maximally). (p. 771)

Rakos believes that his definition is useful to clinicians because it marks the distinction between assertive and aggressive behavior.

In summary, the majority of definitions of assertiveness have been adequate for clinical application but have generally lacked the specificity needed for the measurement and research of assertive behavior.

Galassi and Galassi (1978) noted that

An adequate conceptualization of assertive behavior involves the specification of three components of assertion; a behavioral dimension (behaviors), a persons dimension (persons), and a situational dimension (situations) within a cultural or subcultural context. . . . (p. 17)

Theoretical Formulations

Relatively little attention has been directed towards the consideration of the theoretical formulations of assertiveness. Instrumental and operant learning models have been traditionally utilized to explain the development of assertive behavior and the workings of assertiveness training procedures. The major formulations offered by Salter (1949) and Wolpe (1958) "have not been subjected to serious scrutinization nor to systematic investigation" (Galassi & Galassi, 1978, p. 20).

Salter (1949) believed that inhibition and excitation in emotional expressiveness are generalized personality traits. He theorized that individuals have a natural tendency toward excitatory behavior and that the punishment of children's expressive behavior by adults results in an increase of inhibitory responses. Salter viewed the "inhibitory person" as incapable of emotional expression and uncomfortable and ineffective in social situations. Treatment for inhibited individuals was comprised of activities designed to increase their "excitatory reflexes" (e.g., initiating conversations, expressing opinions). Salter's primary clinical goal was to help the inhibited person become more expressive and assertive in social situations.

Wolpe (1958) followed Salter's work by utilizing the principles of classical conditioning, and later operant learning theory, to explain the development and modification of nonassertive behavior. According to Wolpe, nonassertive behavior develops primarily through the pairing of assertive behavior with punishment which results in anxiety responses in the presence of assertive cues. Wolpe viewed assertive behavior and conditioned anxiety responses as incompatible. Assertiveness training was described by Wolpe as a procedure that eliminated anxiety responses inhibiting assertive behavior by pairing assertive responses with interpersonal stimulus situations.

In time, Wolpe and others (e.g., Alberti & Emmons, 1974; Wolpe & Lazarus, 1966) recognized that the classical conditioning model was sometimes insufficient in explaining the production or inhibition of assertive behavior and began noting that influence of operant learning elements on assertive responding. Wolpe (1973) noted that the inability to respond assertively was not always caused by the conditioning of anxiety but rather the lack of requisite assertive responses present in one's response repertoire. Wolpe recommended the use of behavioral procedures such as behavior rehearsal, response shaping, therapist exhortation, self-reinforcement, and external reinforcement to teach individuals how to respond assertively.

Although classical conditioning and operant learning models explain most of the behavior change which occurs as a result of assertiveness training, many researchers feel that these theoretical formulations cannot completely account for the development or modification of assertive behavior. In the past few years, researchers have considered how cognitive factors such as belief structures, perceptions of others, and sense

of self-efficacy affect the expression of assertive behavior (e.g., Alden & Safrian, 1978; Eisler, Frederiksen, & Peterson, 1978; Schwartz & Gottman, 1978). The studies dealing with cognitive variables suggest that the trainers and researchers of assertiveness should give consideration to the influence of cognitive as well as behavioral factors on assertive responding.

In summary, there is no one theory that comprehensively explains the development of assertive behavior. Future theoretical formulations must offer an integrated account of the influence of such factors as external reinforcement, anxiety, client expectations, and cognitive belief structures on assertive responding.

Assessment of Assertive Behavior

Self-report measures

Approximately 25 self-report measures of assertiveness are presently available (e.g., Galassi, DeLeo, Galassi, & Bastien, 1974; Gambrill & Richey, 1975; McFall & Lillesand, 1971; Rathus, 1973). Assertive inventories typically contain 20 to 30 items that are designed to assess the likelihood of individuals' responding assertively in a variety of settings. The devices vary greatly in the amount of research devoted to their validation and each contains certain methodological problems. In addition to the specific methodological flaws of each device, Galassi and Galassi (1978) have identified two problems common to many self-report measures of assertiveness.

The first problem concerns the lack of specificity of items in assertiveness inventories. A survey of the research literature supports the view that assertiveness is comprised of a group of situation-specific response classes (e.g., refusing requests, giving compliments). Most

authors of assertiveness inventories have failed to take this finding into consideration when developing their measures by using items that only assess general patterns of responding. An example of an item lacking specification comes from the Rathus Assertiveness Scale (Rathus, 1973): "I often have a hard time saying no." The Galassis feel that this liability of many self-report measures can only be resolved through an increased specification in scale items to include the behavior, the person, and the situation involved.

The second issue involves the type of information provided by self-report measures. The majority of assertiveness inventories yield a single numerical index which implies that assertion is a unitary personality trait. Factor analytic studies of several devices (e.g., Gambrill & Richey, 1975; Leah, Law, & Snyder, 1979) have yielded multiple factors (e.g., making requests, initiating conversations, expressing opinions) suggesting that there is a need for self-report instruments to be comprised of subscales that tap all the response classes of assertiveness.

In summary, many of the earlier self-report measures of assertiveness contain serious methodological flaws. Several recently published assertiveness inventories (e.g., Leah, Law, & Snyder, 1979; Lorr & More, 1980) have overcome many of the liabilities of previous measures and now offer more valid and reliable assessments of assertiveness.

Behavioral assessment

Role-playing assessment is the most frequently used behavioral measurement procedure in assertiveness training. In role-playing assessment, the subject is required to respond to either a live or taped confederate who emits a standard dialogue. Subjects are instructed to respond to the confederate as they would in a real life setting. A

variety of verbal and nonverbal behaviors that are assumed to be related to assertion are measured by observers. Although role-playing assessment is a standard component of most assertiveness training packages, a couple of validity-related issues have surfaced (Bellack, Hersen, & Lamparski, 1979; Rich & Schroeder, 1976).

The primary question surrounding the utility of role-playing assessment is whether the measurement procedure provides an adequate estimate of real life performance. Studies investigating the external validity of role-playing assessments have failed to yield conclusive support for the use of role-playing as a valid measure of subjects' real performance (e.g., Hersen, Eisler, & Miller, 1975; Kazdin, 1974; McFall & Lillesand, 1971; McFall & Marston, 1970). In addition to the questionable external validity of role-playing assessment, there are also internal validity-related issues that remain unresolved. A variety of variables have been demonstrated to influence the performance of subjects in role-playing situations; the level of demand (Nietzel & Bernstein, 1976), the social context (Eisler, Hersen, Miller, & Blanchard, 1975), and the perceived consequences (Fiedler & Beach, 1978). Although role-playing is a valuable clinical training tool, its utility as an assessment procedure still remains to be demonstrated.

Direct observation in naturalistic settings (Gutride, Goldstein, & Hunter, 1973; O'Connor, 1969) and contrived behavioral tasks (McFall & Marston, 1970; McFall & Twentyman, 1973) have also been utilized to assess assertive behavior. Obtaining direct samples of behavior in natural settings is difficult and usually only feasible in institutional settings. Using contrived behavioral tasks to assess assertiveness, such as placing a telephone call to a subject from a "salesman" (McFall &

Marston, 1970), raises serious ethical issues. The liabilities of these measurement procedures have caused researchers to rely on role-playing for the behavioral assessment of assertiveness.

In summary, it is recognized that obtaining a behavior sample is the most appropriate and valid manner to assess behavior change. Until strategies are devised to assess behavior unobtrusively in subjects' natural settings, researchers will have to rely on the existing behavioral measures of assertiveness.

Assertiveness Training Research

The ability to draw generalizations from assertiveness training research or make direct comparisons of studies is hampered by the varying methodologies employed (Galassi & Galassi, 1978; Rich & Schroeder, 1976). Differences in methodology include the populations sampled, treatment components, subjects' initial level of assertiveness, outcome measures, and treatment lengths. As Rich and Schroeder (1976) observed, "Assertiveness training is not a unique or even well-defined training procedure. The term assertiveness defines the target of the training procedures rather than their nature" (p. 1085).

This review of assertiveness training research will be divided into two sections: the efficacy of assertiveness training and the differential effectiveness of assertiveness training components.

Effectiveness of assertiveness training

The strongest support for the efficacy of assertiveness training has come from studies employing college students and normal adults. As assessed by a variety of self-report and behavioral measures, assertiveness training has been shown to be superior to placebo or no treatment control conditions in increasing assertiveness (Gormally, Hill, Otis, &

Rainey, 1975; Jacobs & Cochran, 1982; Janda & Rimm, 1977; Jansen & Litwack, 1979; Kirschner, 1976; McFall & Marston, 1970; McKellar, 1977; Tiegerman & Kassino, 1977). Assertiveness training has also been shown to be effective with individuals with social dating problems (Galassi, Galassi, & Litz, 1974; Joanning, 1976), nonassertive individuals (Alden, Safrian, & Weideman, 1978; Brown, 1980; Carmody, 1978; Derry & Stone, 1979; Hammen, Jacobs, Mayol, & Cochran, 1980; Hedquist & Weinhold, 1970; McFall & Twentyman, 1976), handicapped persons (Mischel, 1978), resident assistants (Layne, Layne, & Schoch, 1977), and couples (Epstein, Degiovanni, & Jayne-Lazarus, 1978).

With the growth of the women's rights movement in the 1970's, assertiveness training was proclaimed in the popular and professional literature as a vehicle to help women achieve personal and professional equality (e.g., Butler, 1973; Jakubowski-Spector, 1973; Phelps & Austin, 1975). The research data support the efficacy of assertiveness training when used with female adults or college students (Bander, Russell, & Weiskott, 1978; Berah, 1981; Rathus, 1972; Steel, 1977). Assertiveness training has also been used effectively with nonassertive women (Holmes & Horan, 1976; Manderino, 1974; Thelen & Lasoski, 1980; Weiskott & Clelland, 1977; Wolfe & Fodor, 1977) and nurses (Carlson, 1976). The nonsignificant results obtained for studies employing professional women (Brockway, 1976), overweight females (Conoley, 1976; McMillan, 1976), and widowed women (Bettis, 1978) demonstrate that assertiveness training is not a panacea for all interpersonal problems.

Duehn and Mayadas (1976), McKinlay, Kelly, and Patterson (1977), and Edwards (1972) reported case studies illustrating how assertiveness training can be used to enhance the social interaction skills of male

homosexuals. In the only group assertiveness training research study employing male homosexuals, Russell and Winkler (1977) found no difference between the effectiveness of an assertiveness training group and a discussion group in modifying nonassertive behavior. The authors suggest that important issues concerning the social-cultural attitudes toward homosexuality must be dealt with before the usefulness of assertiveness training with homosexuals can be accurately assessed.

While Bridenbach (1978), Wehr (1978), and Pentz (1980) have had success in using assertiveness training related procedures with adolescents, other researchers have reported mixed results. Shy adolescents who were assigned to an assertiveness training group demonstrated improved assertiveness skills in role-play situations but did not indicate significant changes on a self-report measure (Kirkland, 1978). Doran (1977) found that the addition of assertiveness training to a high school career awareness course did not significantly influence the self-reported assertiveness of adolescent females.

Though assertiveness training programs have been proposed for children (Palmer, 1977; Rausbaum-Selig, 1976), only a few studies have investigated the utility of assertiveness training with children. In a case study, Patterson (1972) used assertiveness training techniques and time-out procedures to modify the crying behavior of a nine-year-old boy. Vorgin and Kassinove (1979) found that assertion lectures combined with behavior rehearsal were effective in increasing the self-reported assertiveness of third graders. Reese and Resick (1979) used individual and group assertiveness training with third and fourth graders and were able to increase assertive responding in trained and untrained role-play scenes but not in the children's classroom setting. Buell (1976)

demonstrated that boys, ages 8 to 18 years old, who received assertiveness training were superior to control subjects on role-playing measures regardless of age or degree of emotional stability.

Assertiveness training has had moderate success in modifying the aggressive behavior of individuals. Mills (1978) and Gentile (1977) reported that male prison inmates who received assertiveness training self-reported an increase in assertiveness with no change in behavioral performance. Rimm, Hill, Brown, and Stuart (1974) found that males with a history of expressing anger in an antisocial or inappropriate manner who received assertiveness training reported a higher level of assertiveness than control subjects. Assertiveness training, in conjunction with contingency contracting, was successfully used to modify the violent behavior of a 22-year-old handicapped male (Wallace, Teigen, Liberman, & Baker, 1973).

The usefulness of assertiveness training in modifying the aggressive behavior of adolescents and children has also been assessed. Juvenile delinquents who received assertiveness training improved on self-report and role-play assertiveness measures but showed only limited generalization of training to daily situations (DeLange, Lanham, & Barton, 1981; Hazel, Schumaker, Keuhn, Shennan, & Sheldon-Wildgen, 1979; Kornfeld, 1974). Lee, Hallberg, and Hassard (1979) found that adolescents, judged as aggressive by their peers, who received assertiveness training increased in self-reported assertiveness but that improvement was not reflected in peer rating. And finally, Knauss (1977) used assertiveness training to decrease the aggressive behavior of 9 out of 12 fourth grade boys.

The second most frequently used population in assertiveness training research is psychiatric patients. As assessed by a variety of assertiveness outcome measures, assertiveness training has been demonstrated to be superior to placebo or no treatment conditions in increasing assertiveness in several studies (Booraem & Flowers, 1972; Field & Test, 1975; Finch & Wallace, 1977; Hanson & Bencomo, 1972; Longin & Rooney, 1975; Percell, Berwick, & Beigel, 1974). Nonsignificant results for the use of assertiveness training with psychiatric patients have been reported by Friedman (1976), Serber and Nelson (1971), Lomont, Gilner, Spector, and Skinner (1969), and Weinman, Gelbart, Wallace, and Post (1972). The criticisms raised by Galassi and Galassi (1978) concerning the lack of consistency of assertiveness training programs used in research studies are more applicable to this population than any other group. Also, the inability of diagnostic classifications to adequately describe the social skills of psychiatric patients and the confounding of assertiveness training with other on-going treatments make an accurate interpretation of these findings very difficult.

In addition to being used with psychiatric patients, assertiveness training has been used with other types of maladaptive behavior patterns, such as alcoholism and depression. Several investigators have used assertiveness training in conjunction with traditional treatments in an attempt to modify the social skills of alcoholics. Adinolfi, McCourt, and Geoghegan (1976), Foy, Miller, Eisler, and O'Toole (1976), and Martorano (1974) have reported increases in attitudinal assertiveness for alcoholics receiving assertiveness training and Hirsch, Von Rosenberg, Phelan, and Dudley (1978) and Freedberg and Johnston (1981) have noted behavioral improvements.

Since the first case studies reported by Wolpe and Lazarus (1966), several researchers have attempted to assess the effectiveness of assertiveness training with depressed individuals. Sanchez, Lewinsohn, and Larson (1980) found assertiveness training to be more effective than traditional psychotherapy or no treatment in increasing self-reported assertiveness with depressed patients. However, Fagan (1979) found no significant differences between the effects of assertiveness training and traditional treatments. Many of the assertiveness training studies with depressed and alcoholic individuals contained the following methodological flaws: assertiveness training was frequently confounded with other treatments (e.g., on-going psychotherapy, medication), the lack of adequate control conditions, the lack of behavioral measures, and the absence of follow-up assessments.

Although Salter (1949) introduced assertiveness training as a form of individual therapy, the majority of individuals receiving assertiveness training today do so in a group setting. In fact, most assertiveness trainers feel that assertiveness training is more effective when delivered in a group format (e.g., Alberti & Emmons, 1974; Lange & Jakubowski, 1976). Only two studies have attempted to directly assess the relative effectiveness of individual versus group assertiveness training. Linehan (1979) compared the effectiveness of assertiveness training delivered in eight one-hour individual sessions to eight 90-minute group sessions with adult women. Results indicated that all the participants made significant improvements and no differences were found between the treatment groups. Reese and Resick (1979) also found no difference between individual and group assertiveness training for third and fourth grade children. The findings from these studies, and others

which have assessed the efficacy of assertiveness training, suggest that assertiveness training is effective regardless of whether it is delivered in individual or group settings.

Little consideration has been given to the impact of subject or therapist characteristics on the effectiveness of assertiveness training. While the majority of studies indicate that assertiveness training is effective for males and females, only a few studies have directly assessed the impact of sex on treatment effectiveness. The findings from these studies suggest that the sex of the therapist or subjects has no noticeable effect on treatment outcome (Eichenbaum, 1978; Hall, 1976; Linehan, Goldfried, & Goldfried, 1975; Parr, 1975). No studies have investigated the effect of group size or the number of therapists on the effectiveness of assertiveness training.

A couple of studies have directly investigated the influence of scheduling of treatment sessions on the effectiveness of assertiveness training. Berah (1981) and El-Shamy (1978) demonstrated that regardless of the scheduling of assertiveness training (i.e., six hours in one session versus six weekly one-hour sessions), treatment subjects showed greater increases in self-reported and behavioral assertiveness than control subjects though no differences between treatment groups were established. Bander, Russell, and Weiskott (1978), using shorter treatment periods, found that an eight-hour assertiveness training group was significantly more effective than a two-hour assertiveness training group. With the limited number of studies in this area, it is impossible at this time to determine the optimal treatment length of assertiveness training.

In summary, the support for the efficacy of assertiveness training has been particularly strong from studies employing college students. Assertiveness training has shown moderate success with other populations. The ability to draw a conclusion from the research findings has been hampered by a lack of a standardized treatment procedure. As Galassi and Galassi (1978) concluded, "the non-equivalence of the treatment packages precludes a definitive statement about the effectiveness of assertiveness training at this time" (p. 23).

Components of assertiveness training

This section reviews studies which compare the differential effectiveness of the various components of assertiveness training. Galassi and Galassi (1978) have identified two problems that are encountered when comparing component studies. First, the components may not be clearly identified (i.e., behavior rehearsal may include only rehearsal or a combination of rehearsal and feedback). Second, studies may use the same components but with different populations, outcome measures, or treatment durations.

Richard McFall and his associates completed some of the first investigations designed to assess the efficacy of various assertiveness training components, specifically behavior rehearsal. Using a standardized semi-automated behavior rehearsal training procedure with college students, McFall and Marston (1970) investigated the effectiveness of behavior rehearsal with and without performance feedback. Both behavior rehearsal conditions resulted in greater improvement on a variety of measures with no significant difference between the treatment groups. McFall and Lillesand (1971) expanded on the previous study by adding two components, symbolic modeling and therapist coaching, and also

compared overt and covert response rehearsal. Both treatment groups proved superior to the control group on self-report and behavioral measures and no differences were found between the covert rehearsal group and the overt rehearsal condition. In a more complex study, McFall and Twentyman (1973) evaluated the contributions of rehearsal, modeling, and coaching in modifying the nonassertive behavior of college students. Results indicated that rehearsal and coaching have an individual and additive effect on training while the addition of modeling was negligible.

While several studies have demonstrated the superiority of behavior rehearsal to placebo or no treatment conditions (Arnold, Winrich, & Dawley, 1973; Bach, Lowry, & Moylan, 1973; Joanning, 1976), other researchers have investigated the effectiveness of behavior rehearsal in conjunction with other assertiveness training components. Behavior rehearsal combined with modeling, coaching, or both, has been shown to be an effective procedure for modifying nonassertive behavior (Thorpe, 1975; Twentyman, Gibraltar, & Inz, 1979; Voss, Arrick, & Rimm, 1978). The addition of video and audio feedback did not significantly improve the effectiveness of a behavior rehearsal procedure (Aiduk & Karoly, 1975). Loo (1972) found that the addition of a projected consequences component (i.e., knowledge of the other person's reaction to an assertive response) to McFall's behavior rehearsal procedure did not significantly contribute to training.

The results concerning the relative effectiveness of overt rehearsal as compared to covert rehearsal have been conflicting. Both Longin and Rooney (1975) and Prout (1974) demonstrated the superiority of overt rehearsal to covert rehearsal with psychiatric patients and college

students respectively. In contrast, McFall and Lillesand (1971) and Buttrum (1975) found that variations of covert and overt rehearsal were equally effective in increasing assertiveness.

The second most frequently researched component in assertiveness training has been modeling. Rathus (1972) and Snyder (1973) have demonstrated the effectiveness of modeling procedures with college students in increasing assertiveness as contrasted to placebo or no treatment conditions. Young, Rimm, and Kennedy (1973) using a modeling procedure with and without reinforcement found that both modeling groups made significant gains over the control groups but were not different in their effectiveness. And finally, the addition of a response playback component did not significantly improve the effectiveness of a modeling procedure designed to improve assertive skills (Hutchinson, 1977).

Studies with psychiatric patients have also attempted to clarify the contribution of modeling in developing assertive responding. Eisler, Hersen, and Miller (1973) showed that modeling plus practice was significantly more effective in increasing assertiveness than either a practice only or a control condition. Hersen, Eisler, Miller, Johnson, and Pinkston (1973) demonstrated that a modeling with instructions condition was more effective than modeling only, practice-control, instructions only, or no treatment groups in modifying nonassertive behavior. Several case studies have been reported that also support the usefulness of various modeling procedures with psychiatric patients (Edelstein & Eisler, 1976; Foy, Eisler, & Pinkston, 1975). Using modeling combined with instructions or instructions for generalization, Hersen, Eisler, and Miller (1975) found that both treatment groups increased

assertive responding and that the instructions for generalization had little effect on the transfer of training.

The efficacy of an alternative modeling procedure, covert modeling, has been evaluated in several studies. Kazdin (1974) compared the effectiveness of covert modeling (i.e., subjects were asked to imagine a model acting assertively) to covert modeling plus reinforcement (i.e., subjects imagined a model acting assertively and being reinforced for such an action) in developing the assertive responding of college students. Both treatment groups improved significantly on self-report and role-playing measures and the treatment effects were maintained at a three month follow-up. Expanding on the previous study, Kazdin (1976) examined the effects of the number of imagined models and model reinforcement in covert modeling. Results indicated that multiple models and positive reinforcement increased assertiveness as measured by a variety of measures and treatment effects were maintained at a four month follow-up. Nietzel, Martorano, and Melnick (1977) demonstrated that the addition of reply training to covert modeling significantly improved the effectiveness of covert modeling.

Though assertiveness training began with a behavioral orientation, researchers have recently incorporated and emphasized cognitive training procedures. It is assumed that cognitive procedures, which are designed to modify maladaptive cognitions, will be more effective than assertiveness training that directly focuses on social skills training. Several studies have found that behavioral and cognitive oriented assertiveness training, or combinations of the two, were consistently superior to various types of control conditions while no differences were established between the procedures (Alden & Safrian, 1978; Hammen, Jacobs, Mayol, & Cochran,

1980; Linehan, Goldfried, & Goldfried, 1979; Tiegerman & Kassino, 1977; Wolfe & Fodor, 1977). Derry and Stone (1979) found no differences between groups receiving behavior rehearsal alone or in combination with cognitive training strategies on behavioral outcome measures but did demonstrate better performance of the cognitive oriented groups on self-report measures. Jacobs and Cochran (1982), utilizing an in vivo self-monitoring procedure deemed more personally relevant than previously used outcome measures, demonstrated the treatment superiority of cognitive restructuring strategies combined with behavior rehearsal to behavior rehearsal procedures.

Although components such as audio-videotape feedback, homework, and bibliotherapy have been used in successful assertiveness training programs, only a few studies have attempted to directly assess their contribution to treatment effectiveness. McGovern (1977) and Phinney (1977) found that the addition of bibliotherapy to assertiveness training packages did not have an additive effect on treatment outcome. The addition of videotape feedback (Rich, 1976) and videotape feedback and homework (Lang, 1977) did significantly enhance the effectiveness of assertiveness training. In general, most studies showed that the addition of videotape feedback did not have an additive effect on assertiveness training (Aiduk & Karoly, 1975; Gormally, Hill, Otis, & Rainey, 1975; Prout, 1974).

In summary, it appears that the components of behavior rehearsal, modeling, covert rehearsal, or combinations of these procedures are effective techniques in the teaching of assertive behavior. The effectiveness of less frequently used components is not clear. Which operations are best for which populations still remains to be determined.

Summary of assertiveness training research

The research evidence to date supports the efficacy of assertiveness training as a loosely grouped set of procedures that can modify the social skills of a variety of populations. The lack of standardized procedure has hampered reviewers from drawing conclusions from the research findings. The meta-analysis proposed in this study will overcome the inability of previous reviews to directly compare the findings of assertiveness training studies utilizing different components and will provide the following information: a clear synthesis of the assertiveness training research findings, a precise estimate of treatment effectiveness, an assessment of the impact of subject, therapist, and design characteristics on treatment outcomes, and recommendations for future research efforts based on the findings of the meta-analysis.

Meta-Analysis Research

There are five methodological issues that must be dealt with in any meta-analysis; the locating of studies, the setting of criteria for including studies, the coding of study characteristics, the judging of independence among studies, and the quantifying of study outcomes. In this section, the procedures for each of these steps will be outlined. The Smith and Glass (1977) meta-analysis of psychotherapy outcomes--which is the most widely critiqued meta-analysis and is similar to the present study--will be used to illustrate meta-analytic procedures.

Locating the Studies

The first step in a meta-analysis is to locate as many studies as possible that deal with the subject area under investigation. The primary sources that are used to locate studies in psychology and education are Psychological Abstracts, Dissertation Abstracts International,

Educational Research Information Center, and major review journals (e.g., Psychological Bulletin, Review of Education and Research). Smith and Glass's search of the literature yielded approximately 1,000 documents that were related to their subject area.

While most researchers have used published and unpublished studies in their meta-analyses, others (e.g., Boulanger, 1980; Haertel, 1980; Uguroglu & Wahlberg, 1979) give preference to published research. There are two findings which suggest that reliance on only published studies may introduce a source of bias in meta-analytic procedures: First, Greenwald (1975) and Smith (1980) have noted that published studies report a higher percentage of significant findings than unpublished research. Second, the type of publication (i.e., published or unpublished) was found to be significantly related to study outcomes in two meta-analyses (Hartley, 1977; Kulik, Kulik, & Cohen, 1979). These findings encourage the use of both published and unpublished studies in meta-analytic research.

Criteria for Including Studies

After locating all the relevant studies, the meta-analyst sets guidelines to define and delimit the content area under investigation. The specific guidelines vary from meta-analysis to meta-analysis and are dependent upon the nature of the subject area and the researcher's interests. Smith and Glass stipulated that studies must have involved some form of psychotherapy and have at least one treatment condition compared to either a placebo or control group. Using these criteria, Smith and Glass reduced their pool of studies from 1,000 to 375.

One of the most frequently raised criticisms of meta-analysis is the lack of control for the quality of studies used. Glass (1978)

defends the use of studies of varying quality with the following argument:

An early attempt at meta-analysis was characterized somewhat cynically by a critic as follows: "Although no single study was well enough done to prove that psychotherapy is effective, when you put all these bad studies together, they show beyond doubt that therapy works." This skeptical characterization with its paradoxical ring is a central thesis of research integration. In fact, many weak studies can add up to a strong conclusion. Suppose that, in a group of 100 studies, studies 1-10 are weak in measurement but otherwise strong; studies 11-30 are weak in internal validity only; studies 31-40 are weak only in data analysis; and so on. But imagine also that all 100 studies are somewhat similar in that they show a superiority of the experimental over the control group. The critic who maintains that the total collection of studies does not support strongly the conclusion of treatment efficacy is forced to invoke an explanation of multiple causality (i.e., the observed difference can be caused either by this particular measurement flaw or this particular design flaw or this particular analysis flaw or . . .). The number of multiple causes which must be invoked to counter the explanation of treatment efficacy can be embarrassingly large for even a few dozen studies. Indeed, the multiple-defects explanation will soon grow into a conspiracy theory or else collapse under its own weight. Respect for parsimony and good sense demands an acceptance of the notion that imperfect studies can converge on a true conclusion. (p. 367)

In contrast to Glass, other meta-analysts have been more concerned about the quality of studies incorporated in their meta-analyses (e.g., Cohen, 1981; Kulik, Kulik, & Cohen, 1979). For example, Cohen (1981) used only studies free of major methodological flaws (e.g., if no differences existed between treatment and control at pretesting) in his meta-analysis. With a low correlation found between the overall treatment effect size and the degree of internal validity of studies used in meta-analyses (Glass & Smith, 1979; Smith, Glass, & Miller, 1980), the impact of poorly designed studies on meta-analysis is still unclear.

Coding the Study Characteristics

The coding of study characteristics is a relatively straight forward procedure. The meta-analyst first tries to identify the features of the research problem which may mediate study outcomes and then codes each study accordingly. These characteristics may include methodological features, subject characteristics, treatment features, and publication features. For example, Smith and Glass identified 16 study characteristics ranging from subject characteristics (e.g., age, classification) to features of treatment (e.g., type of therapy, duration of treatment).

To assess the accurate coding of study characteristics, most meta-analysts have used two or more individuals to code the studies (e.g., Cohen, 1981; Cohen, Kulik, & Kulik, 1982). The intercoder reliability coefficients of study features in meta-analytic studies have generally ranged from .70 to 1.00. Although the agreement among coders has been quite high, some researchers (Jackson, 1980; Stock, Okun, Haring, Miller, Kinney, & Ceurvorst, 1982) have expressed the need for more well-defined coding procedures (e.g., well-defined coding forms, more extensive coder training).

Judging the Independence of Studies

Many of the studies that are included in a meta-analysis may have more than one finding. This poses an important methodological issue for the meta-analyst: That is, whether the collection of study findings or the individual findings in a study should serve as the unit of analysis. If the study is treated as the unit of analysis, the amount of information extracted from the meta-analysis may be limited. Considering each study outcome as a unit of analysis may yield more

information but violates the independence assumption underlying inferential statistics.

The question of independence among study findings has been dealt with by different methodological perspectives. Smith and Glass treated each individual outcome finding as one unit of analysis. While the data set to be analyzed invariably contained sets of dependent results, Glass and Smith proceeded with the assumption of independence among the data. Glass (1978) admits that the assumption of independence is untrue and "risky" but believes the assumption is practical since it allows for the use of inferential statistics. Other meta-analysts (Haertel, 1980;) have also treated individual study findings as the unit of analysis but have utilized complicated statistical procedures (Tukey jackknife method, Mosteller & Tukey, 1968) to account for the interdependences among the data.

Some meta-analysts have been more cautious in their treatment of the independence of study findings. Kulik and his colleagues (Cohen, 1981; Kulik, Kulik, & Cohen, 1979) strive for a low ratio of individual findings to studies in their meta-analyses by excluding studies that contribute more than two findings. Other meta-analysts (Johnson, Maruyama, Johnson, Nelson, & Skon, 1981; Landman & Dawes, 1982) have controlled for interdependencies among data by pooling all the individual outcomes within a single study and then calculating the average treatment effect for each study. In a reanalysis of Smith and Glass's meta-analysis, Landman and Dawes (1982) found no differences in treatment effects sizes computed by the latter procedure or by Glass's procedure of treating each outcome as an unit of analysis. At this time,

meta-analysts may want to select the conservative alternative; that is, compute effect sizes by using both procedures in their meta-analyses.

Quantifying Study Outcomes

There are two procedures for determining treatment effects across studies. One strategy involves combining the separate statistical significance tests of each study and computing an overall average significant level for the body of the studies (Rosenthal, 1978; Rosenthal, 1979). While the use of significance levels is adequate for the testing of hypotheses about groups of studies, the procedure is directly affected by sample size and fails to yield the descriptive information of the effect size metric.

Glass (1976) proposed that the magnitude of the effect of a treatment condition can be estimated with the effect size statistic. Effect size was defined by Glass (1976) as

$$E = \frac{\bar{x}_t - \bar{x}_c}{SD_c}$$

where

$\bar{x}_t$ = treatment group mean,

$\bar{x}_c$ = control group mean, and

SD_c = control group standard deviation.

As a standard score, effect size indicates how many standard deviation units one group mean deviates from another group mean. The larger the effect size, the greater the magnitude of the treatment effect.

Smith and Glass (1977) found an effect size of .68 for psychotherapy outcomes. Glass (1976) transformed the effect size of .68 to percentile terminology and concluded that "therapy of any type can be expected to

move the typical client from 50th to the 75th percentile of the untreated population" (p. 7).

Summary of Meta-Analysis Research

Meta-analysis is a relatively new procedure designed to systematically synthesize research findings. Meta-analytic procedures offer clear advantages over traditional narrative review strategies. These advantages include obtaining an effect size estimate, describing the form of a relationship, integrating the findings of a large body of research, and providing descriptive statistical information about those studies. While there are many statistical and methodological issues that are just beginning to be resolved, meta-analysis is a form of data synthesis that will facilitate our understanding of assertiveness training research.

CHAPTER III

METHOD

This section describes the procedure used for locating studies, selecting studies, coding study features, quantifying study outcomes, and analyzing the data.

Sources of Data

The first step in the meta-analysis was to locate as many studies as possible that investigated the efficacy of assertiveness training. The sources used to locate studies included: Psychological Abstracts, Dissertation Abstracts International, the major review articles of assertiveness training (Galassi & Galassi, 1978; Heimberg, Montgomery, Madsen, & Heimberg, 1977; Rich & Schroeder, 1976), and the annotated bibliography of assertiveness training research by Springer-Moore and Jack (1981). The bibliographies in articles located through the initial search provided an additional source of studies.

The reference search located approximately 550 titles dealing with assertiveness training. On the basis of information contained in the abstracts of the articles, the initial pool of studies was reduced to 55 useful published studies. (Because of limited interlibrary services, only 25 out of 65 potentially useful dissertations could be reviewed.) Copies of these 80 studies were obtained and read in full. Of these studies, 22 (16 journal, 6 dissertation) met the criteria for inclusion in the final sample.

To be included in the meta-analysis, a study had to meet the following criteria: First, the procedure used in a study must have been clearly labeled as assertiveness training. Second, a study must have had at least one treatment condition compared to a control condition. Third, a study must have used at least one outcome measure of assertiveness. And finally, a study must have reported enough data for the coding of study characteristics and the quantifying of study outcomes. The 22 studies that met these criteria are listed in Table 1. The studies that were read in full and excluded from the meta-analysis are listed in Appendix A.

Describing Study Characteristics

To characterize the studies, 29 variables were identified. These variables covered the methodological features, subject characteristics, therapist characteristics, assessment characteristics, and publication features of the studies reviewed. The 29 variables and the criteria for coding were as follows:

1. The use of instructions. Were subjects provided with descriptions of assertive responding or general performance guidelines?
2. The use of live models. Were examples of assertive behavior portrayed by role models?
3. The use of taped models. Were examples of assertive responding displayed via video tape?
4. The use of behavior rehearsal. Did subjects practice, rehearse, or role-play assertive responses?
5. The use of covert rehearsal. Did subjects practice imagining assertive responding?
6. The use of video taped feedback. Was feedback provided to subjects in the form of audio or video taped playback?

Table 1
Studies Used in Meta-Analysis

Study
Ball, 1976
Brazelton, 1976
Brockway, 1976
Brown, 1980
Carmody, 1978
Fielder, Orenstein, Chiles, Fritz, & Breitt, 1979
Friedman, 1976
Galassi, Galassi, & Litz, 1974
Gormally, Hill, Otis, & Rainey, 1975
Holmes & Horan, 1976
Jansen & Litwack, 1979
Joanning, 1976
Layne, Layne, & Schoch, 1977
Lee, Hallberg, & Hassard, 1979
McKellar, 1977
Rathus, 1972
Rimm, Hill, Brown, & Stuart, 1974
Russell & Winkler, 1977
Scherer & Freedberg, 1976
Thibodeau, 1975
Tiegerman & Kassinove, 1977
Wall, 1977

7. The use of coaching. Did the therapist(s) provide the subjects with corrective feedback?

8. The use of self-feedback. Did the subjects evaluate their own behavior against performance criteria?

9. The use of group feedback. Did subjects receive verbal feedback from each other?

10. The use of cognitive restructuring strategies. Were the subjects taught cognitive restructuring techniques (i.e., Rational Emotive Therapy)?

11. The use of homework. Were the subjects required to monitor or perform specific behaviors outside of the training setting?

12. The use of bibliotherapy. Were the subjects required to read material pertaining to assertiveness training?

13. The training of the therapists. Were the therapists graduate students or professional counselors?

14. The number of therapists. How many therapists were assigned to each treatment condition?

15. The sex of the therapists. Were the therapists male or female?

16. The classification of the subjects. What population was the subjects drawn from?

17. The pretreatment level of assertiveness of the subjects. Prior to treatment, were the subjects assessed as aggressive, nonassertive, or assertive?

18. The age of the subjects. Were the subjects adolescents, college students, or adults?

19. The number of subjects. How many subjects were assigned to each treatment condition?

20. The sex of the subjects. Were the subjects male or female?

21. Type of control condition. Did the study design include a placebo or a no treatment control condition?

22. Type of outcome measures. Were the outcome measures behavioral or self-report assessments of assertiveness?

23. Time of outcome measurement. When were the outcome measures taken?

24. Number of sessions. How many treatment sessions were held?

25. Duration of sessions. What was the total amount of time spent in treatment?

26. Distribution of sessions. How many weeks did treatment span over?

27. Source of publication. Was the study a dissertation or a journal article?

28. Time of publication. What year was the study published?

29. Name of technique. Was the procedure referred to as assertion, assertiveness, or assertive training?

The author coded all the studies according to the above criteria. To check coding reliability, a trained graduate student independently coded all the studies. For the 29 coding variables, interrater reliability coefficients ranged from .72 to 1.00 with a median of .95. The interrater agreement coefficients for all the variables are listed in Appendix B. On items which were clearly coded incorrectly, the author made the necessary corrections. When disagreement on items occurred, the author and coder reviewed the coding of both raters to assure total agreement on all the coding items. The final coding of the studies used in the meta-analysis is described in Appendix C.

Quantifying Study Outcomes

The index used to describe the magnitude of the treatment effect was the effect size statistic. Effect size is defined as the difference between the means of the treatment and control groups divided by the standard deviation of the control group (Glass, 1976). For studies that employed both placebo and no treatment conditions, the data from the placebo group were used.

The calculation of effect sizes was straight forward for studies that reported unadjusted means and standard deviations of the experimental and control groups. When this information was not reported, effect sizes were derived from inferential test statistics by using procedures outlined by Glass (1978) and McGraw and Glass (1980). Based on Hedges' (1981) recommendations, each effect size was weighted to control for the sample size of each study.

Unit of Analysis

The data were analyzed with two different approaches with respect to the question of independence among the study findings. The first procedure treated each study finding as the unit of analysis. This procedure (i.e., unit of analysis = individual outcome measure) yielded 67 effect sizes for the 22 studies. The second strategy pooled effect sizes within each study (or within a treatment condition if a study had two or more different assertiveness training treatment groups) before averaging across studies. This approach yielded 27 effect sizes for the 22 studies.

Data Analysis

Three general sets of statistical analyses were performed on the data using both the study and the individual outcome measure as the unit of analysis. The first set of analyses used descriptive statistics to estimate the overall treatment effect and effect sizes for each study characteristic. The second group of analyses used regression techniques to determine whether study characteristics were significantly related to effect size. The last set of analyses employed multiple regression techniques to determine the relationship between combinations of study variables and effect size.

CHAPTER IV

RESULTS

The findings of the meta-analysis of the 21 studies¹ are described in this section. This chapter is structured to coincide with the questions raised in the first chapter. Before discussing the specific findings of the meta-analysis, the impact of the unit of analysis on the results is detailed.

Unit of Analysis

The data were analyzed with both the individual outcome measure and the study serving as the unit of analysis. A comparison of the results across the two vertical halves of any of the tables presented in this chapter reveals that effect sizes computed at the level of individual outcomes and at the level of the study are not significantly different. The results show that treating nonindependent data (i.e., individual outcomes within studies as the unit of analysis) as if they were independent produced on the average larger effect sizes. The inflated effect sizes are a consequence of the increased sample size that the procedure creates. Since no significant differences exist between the approaches, the ensuing discussion will focus on the more conservative findings produced by treating the study (rather than the individual outcomes) as the unit of analysis.

¹An outlier (Brown, 1980) was identified and removed from the original sample of studies. The study contributed two effect sizes which were approximately 10 times larger than the average effect size.

Overall Effectiveness of Assertiveness Training

The summary statistics for the overall effectiveness of assertiveness training are presented in Table 2. The average effect size for the 21 studies was .74. The effect size index is a standard score; it indicates that the assertiveness training group mean deviated .74 standard deviation units from the control group mean.

The standard deviation of the effect sizes is .70. The distribution of effect sizes was positively skewed with only 6 of the 65 effect sizes indicating a negative treatment effect. Fifty percent of all the effect sizes fell within the range of .34 to 1.08.

The 65 effect sizes were classified into two categories descriptive of the type of outcome measure employed. There were 29 self-report assessments of assertiveness with a mean effect size of .65 and a standard deviation of .71. The average effect size for the 36 behavioral outcomes was .80 with a standard deviation of .87.

The majority of the outcome measures were taken within one week of the completion of treatment. Only two studies assessed the long-term effects of assertiveness training (at two weeks and one year). Although the effect sizes reported at the later assessment times were larger than the average effect size, it was impossible to describe the decay of treatment effects over time with only two post-treatment data points.

The meta-analysis also assessed the impact of the type of control condition (no treatment or placebo) on the calculation of effect sizes. First, when treatment was compared with no treatment, the average effect size was .85 with a standard deviation of .83. Second, when treatment was contrasted with placebo conditions, the mean effect size was .63 with a standard deviation of .52.

Table 2
Summary Statistics for Effect Size Distribution

Statistic	Unit of analysis	
	Individual outcome measure	Study
Number	65	25
Mean	.80	.74
Standard deviation	.74	.70
Percentile		
90	1.81	1.31
75	1.06	1.08
50	.67	.58
25	.37	.34
10	-.02	-.04

Assertiveness Training Components

The descriptive statistics for the 12 assertiveness training components are reported in Table 3. To illustrate the nature of this table, consider the effect size for the instructions component. The statistics reported in the "with" rows refers to the average effect size for all the studies that used instructions as a treatment component. The "without" row refers to the average effect size of the studies that did not use instructions as a treatment component.

The components that were employed most frequently in the 21 studies were instructions, modeling (live models), behavior rehearsal, and coaching. Group feedback and homework appeared in approximately half the studies sampled, while the other components were infrequently incorporated into the training packages.

The effect sizes associated with the presence of the most frequently employed components (instructions, modeling-live models, behavior rehearsal, and coaching) were all approximately equal to the overall effect size. For the remaining components, effect sizes ranged from .90 for bibliotherapy to .44 for covert rehearsal.

The correlations between the individual components and the overall effect size varied greatly. The squares of the correlation coefficients are reported in Table 3. The squared correlation coefficient measures the proportion of the variance in effect sizes that is associated with variability in each study characteristic. The larger the value of the squared correlation coefficient the stronger is the linear relationship between the study characteristic and effect size.

Table 3
Descriptive Statistics for Assertiveness Training Components

Component	Unit of analysis							
	Individual outcome measure				Study			
	<u>n</u>	<u>M</u> _{ES}	<u>SD</u> _{ES}	<u>r</u> ²	<u>n</u>	<u>M</u> _{ES}	<u>SD</u> _{ES}	<u>r</u> ²
Instructions				.04				.020
With	60	.84	.75		24	.76	.71	
Without	5	.28	.32		1	.28	-	
Modeling - live				.04				.001
With	49	.71	.75		20	.76	.72	
Without	16	1.05	.66		5	.70	.69	
Modeling - taped				.036				.008
With	9	1.14	.46		2	.96	.34	
Without	56	.74	.76		23	.73	.73	
Behavior rehearsal				-				-
With	65	.80	.74		25	.74	.70	
Without	0	-	-		0	-	-	
Covert rehearsal				.020				.026
With	5	.43	.48		3	.44	.68	
Without	60	.83	.75		22	.79	.74	
Taped feedback				.023				.002
With	21	.96	.51		2	.79	.39	
Without	44	.72	.82		19	.73	.78	
Coaching				.029				.073
With	64	.81	.73		24	.78	.69	
Without	1	-.18	-		1	-.18	-	

Table 3--Continued

Component	Unit of analysis							
	Individual outcome measure				Study			
	<u>n</u>	<u>M</u> _{ES}	<u>SD</u> _{ES}	<u>r</u> ²	<u>n</u>	<u>M</u> _{ES}	<u>SD</u> _{ES}	<u>r</u> ²
Self-feedback				.014				.040
With	19	.66	.51		8	.54	.49	
Without	46	.85	.81		17	.84	.78	
Group feedback				.012				.073
With	38	.73	.39		15	.59	.44	
Without	27	.89	.91		10	.97	.96	
Cognitive restructuring				.003				.017
With	4	.65	.50		2	.44	.59	
Without	61	.81	.75		23	.77	.71	
Homework				.036				.008
With	32	.94	.91		12	.81	.99	
Without	33	.66	.50		13	.68	.28	
Bibliotherapy				.032				.006
With	10	1.11	.57		3	.90	.77	
Without	55	.74	.76		22	.72	.71	

Note. n = number of effect sizes; M_{ES} = mean effect size; SD_{ES} = standard deviation of effect sizes; r = correlation between component and effect size.

Table 4 reports inferential statistics comparing the "with" and "without" means for each component listed in Table 3. To clarify the nature of these tests, consider the instructions component. The F statistics are non-significant for both the individual outcome measure and the study as the unit of analysis. This indicates that on the average the effect size of studies using instructions as a component is not significantly different from the effect size of studies that did not use instruction as a treatment component. Inspection of Table 4 reveals that there are no significant effects for any of the components.

Table 5 summarizes additional analyses of the assertiveness training components. To illustrate the meaning of these analyses, consider the analysis of the response-acquisition operations. This analysis investigated whether knowledge of the response-acquisition components involved in a treatment could be used to predict effect size. As indicated in Table 5, the results are not significant for any of the component sets. This suggests that the component combinations used in the 21 studies were not differentially effective in predicting effect size.

Therapist Characteristics

The descriptive statistics for the characteristics of the therapists are reported in Table 6. There were usually one or two therapists assigned to each treatment condition. The training level of the therapist was fairly evenly divided between student and professional counselors. The sex of the therapists varied among the studies. None of the therapist characteristics was significantly related to the overall effect size (see Table 7).

Table 4
Inferential Statistics for Assertiveness Training Components

Component	Unit of analysis			
	Individual outcome measure		Study	
	<u>F</u>	<u>(p <)</u>	<u>F</u>	<u>(p <)</u>
Instructions	2.74	(.10)	.45	(.51)
Modeling - live	2.51	(.12)	.02	(.89)
Modeling - taped	2.39	(.13)	.20	(.66)
Behavior rehearsal	-	-	-	-
Covert rehearsal	1.31	(.26)	.62	(.44)
Taped feedback	1.53	(.22)	.03	(.87)
Coaching	1.79	(.19)	1.87	(.18)
Self-feedback	.91	(.34)	.95	(.34)
Group feedback	.75	(.39)	1.83	(.19)
Cognitive restructuring	.17	(.68)	.41	(.53)
Homework	2.38	(.13)	.21	(.65)
Bibliotherapy	2.12	(.15)	.14	(.71)

Table 5

Summary Statistics for Groups of Assertiveness Training Components

Component sets	Unit of analysis					
	Individual outcome measure			Study		
	<u>F</u>	(<u>p</u> <)	<u>r</u> ²	<u>F</u>	(<u>p</u> <)	<u>r</u> ²
Response-acquisition operations	1.69	(.18)	.078	.22	(.88)	.014
Response-reproduction operations	1.31	(.26)	.020	.62	(.44)	.026
Response-shaping operations	1.64	(.18)	.096	1.73	(.18)	.26
Response-transfer operations	1.57	(.22)	.048	.12	(.89)	.010

Note. Response-acquisition operations = instructions, modeling - live, modeling - taped; Response-reproduction = behavior rehearsal, covert rehearsal; Response-shaping operations = taped feedback, coaching, self-feedback, group feedback; Response-transfer operations = homework, bibliotherapy.

Table 6
Descriptive Statistics for Therapist Characteristics

Therapist characteristic	Unit of analysis							
	Individual outcome measure				Study			
	<u>n</u>	<u>M</u> _{ES}	<u>SD</u> _{ES}	<u>r</u> ²	<u>n</u>	<u>M</u> _{ES}	<u>SD</u> _{ES}	<u>r</u> ²
Therapist training				.008				.00
Student	51	.76	.56		15	.74	.33	
Professional	14	.92	1.21		10	.76	1.07	
Sex of therapist				.014				.053
Female	18	.84	1.09		6	1.02	1.20	
Male	23	.68	.68		11	.62	.57	
Both	24	.87	.42		8	.71	.32	
Number of therapists				.040				.044
One	26	.62	.63		11	.58	.57	
Two	37	.92	.81		13	.87	.82	
Three	2	.85	.25		1	.85	-	

Table 7
Inferential Statistics for Therapist Characteristics

Therapist characteristic	Unit of analysis			
	Individual outcome measure		Study	
	<u>F</u>	(<u>p</u> <)	<u>F</u>	(<u>p</u> <)
Number of therapists	1.26	(.29)	.50	(.62)
Therapist training	.50	(.48)	.01	(.94)
Sex of therapists	.43	(.65)	.61	(.55)

Subject Characteristics

The descriptive statistics for the subject characteristics are reported in Table 8. The most common population utilized in the studies were mixed sexed groups of normal college students. With only a small number of the studies utilizing psychiatric, alcoholic, and aggressive individuals, it is impossible to estimate accurate effect sizes for these populations. As for the assignment of subjects to treatment condition, the number of subjects per assertiveness training group varied considerably among the studies sampled.

When the individual outcome measure was the unit of analysis, the entire collection of subject variables was significantly related to effect size ($F_{9, 64} = 3.35, p > .003$). Specifically, the age of the subjects variable was significantly related to effect size, while the level of assertiveness and sex of the subjects variables approached significance (see Table 9 for the inferential statistics of the subject characteristics).

Distribution of Training

The descriptive statistics for the characteristics of distribution of training are reported in Table 10. The amount of distribution of treatment time varied greatly among the studies sampled. On the average, clients met for 5-to-6 sessions over a 5-to-6 week period for a total of 8-to-9 hours of assertiveness training. Effect sizes were relatively stable across the number of sessions, weeks, and hours of treatment. None of the distribution characteristics was significantly related to effect size (see Table 11)

Table 8
Descriptive Statistics for Subject Characteristics

Subject characteristic	Unit of analysis							
	Individual outcome measure				Study			
	<u>n</u>	<u>M</u> _{ES}	<u>SD</u> _{ES}	<u>r</u> ²	<u>n</u>	<u>M</u> _{ES}	<u>SD</u> _{ES}	<u>r</u> ²
Classification of subjects				.026				.032
Psychiatric	3	.98	.88		2	.92	.28	
Normal	58	.81	.75		21	.77	.75	
Alcoholic	4	.34	.17		2	.35	.16	
Subjects level of assertiveness				.090				.194
Non-assertive	24	1.08	.86		6	1.28	1.07	
Aggressive	6	.61	.49		3	.66	.22	
Not assessed	35	.63	.64		16	.56	.49	
Age of subjects				.090				.096
Adolescent	4	.49	.57		2	.57	.21	
College students	45	.94	.77		17	.89	.78	
Adult	16	.46	.56		6	.40	.40	
Sex of subjects				.090				.063
Female	18	.48	.52		5	.54	.41	
Male	3	.51	.62		2	.34	.73	
Both	44	.94	.78		18	.85	.76	

Table 8--Continued

Subject characteristic	Unit of analysis							
	Individual outcome measure				Study			
	<u>n</u>	<u>M</u> _{ES}	<u>SD</u> _{ES}	<u>r</u> ²	<u>n</u>	<u>M</u> _{ES}	<u>SD</u> _{ES}	<u>r</u> ²
Number of subjects				.026				.020
1	13	.66	.38		3	.69	.36	
2 - 3	0	-	-		0	-	-	
4 - 5	16	.55	.66		8	.51	.47	
6 - 7	8	.69	.56		4	.69	.43	
8 - 9	11	.53	1.04		3	.70	1.49	
10 or more	17	.70	.62		7	.67	.54	

Table 9
Inferential Statistics for Subject Characteristics

Subject characteristic	Unit of analysis	
	Individual outcome measure	
	<u>F</u>	<u>(p <)</u>
Classification of subjects	.83	(.44)
Subjects' level of assertiveness	2.99	(.06)
Age of subjects	3.05	(.05)
Number of subjects	1.61	(.21)
Sex of subjects	2.93	(.06)

Table 10
Descriptive Statistics for Distribution of Training

Distribution characteristic	Unit of analysis							
	Individual outcome measure				Study			
	<u>n</u>	<u>M</u> _{ES}	<u>SD</u> _{ES}	<u>r</u> ²	<u>n</u>	<u>M</u> _{ES}	<u>SD</u> _{ES}	<u>r</u> ²
Number of sessions				.002				.029
1	8	.89	.17		2	.89	.002	
2 - 3	1	.52	-		1	.52	-	
4 - 5	19	.66	.62		8	.61	.45	
6 - 7	21	.84	.97		8	.98	1.00	
8 - 9	13	1.01	.66		3	.91	.43	
10 or more	3	.45	.87		3	.45	.87	
Number of weeks				.00				.003
1	9	.85	.20		3	.77	.22	
2 - 3	13	.43	.31		6	.49	.24	
4 - 5	20	.98	.63		6	.78	.53	
6 - 7	15	.93	1.14		5	1.16	1.30	
8 - 9	5	.70	.86		2	.77	.49	
10 or more	3	.45	.87		3	.45	.87	
Number of hours				.001				.000
1	0	-	-		0	-	-	
2 - 3	13	.66	.38		3	.69	.36	
4 - 5	3	.53	.63		3	.53	.63	
6 - 7	15	.85	.71		5	.85	.36	
8 - 9	6	1.56	1.46		4	1.28	1.41	
10 or more	28	.69	.61		10	.56	.53	

Table 11
Inferential Statistics for Distribution Characteristics

Distribution characteristic	Unit of analysis			
	Individual outcome measure		Study	
	<u>F</u>	<u>(p <)</u>	<u>F</u>	<u>(p <)</u>
Number of sessions	.08	(.78)	.69	(.41)
Number of weeks	.04	(.84)	.06	(.80)
Number of hours	.04	(.84)	.00	(.99)

Publication Features

The descriptive statistics for the publication features of the studies included in the meta-analysis are reported in Table 12. The final sample was composed of 15 journal studies and six dissertations. The majority of the studies were published during the mid to late 1970's. The procedures used in the studies were usually labeled as assertive or assertion training rather than assertiveness training. None of the publication features was significantly related to effect size (see Table 13).

Summary of the Results

The meta-analysis demonstrated the overall effectiveness of assertiveness training with an average effect size of .74 for the 21 studies that were reviewed. The core components of assertiveness training programs were identified as instructions, modeling, behavior rehearsal, and coaching. Therapist, subject, and distribution characteristics varied considerably among the 21 studies. Subject characteristics were the only variables significantly related to effect size.

Table 12
Descriptive Statistics for Publication Features

Publication feature	Unit of analysis							
	Individual outcome measure				Study			
	<u>n</u>	<u>M</u> _{ES}	<u>SD</u> _{ES}	<u>r</u> ²	<u>n</u>	<u>M</u> _{ES}	<u>SD</u> _{ES}	<u>r</u> ²
Source of publication				.001				.001
Journal	58	.80	.76		19	.75	.77	
Dissertation	7	.73	.60		6	.71	.34	
Year of publication				.053				.003
1980 - 1982	0	-	-		0	-	-	
1978 - 1979	12	.73	.62		6	.84	.37	
1976 - 1977	33	.67	.89		14	.61	.89	
1974 - 1975	18	1.02	.36		4	.96	.16	
Before 1974	2	1.21	1.01		1	1.21	-	
Name of procedure				.032				.090
Assertiveness	6	.39	.15		3	.39	.13	
Assertion	32	.83	.85		9	1.00	.93	
Assertive	27	.85	.65		13	.65	.56	

Table 13
Inferential Statistics for Publication Features

Publication feature	Unit of analysis		Study	
	Individual	outcome measure	F	(p <)
	<u>F</u>	<u>(p <)</u>	<u>F</u>	<u>(p <)</u>
Source of publication	.06	(.81)	.02	(.90)
Year of publication	1.15	(.34)	.46	(.72)
Name of procedure	.99	(.38)	1.09	(.35)

CHAPTER V

DISCUSSION

This chapter is divided into three sections. In the first section a discussion of the findings of the meta-analysis will be presented. The limitations of meta-analytic procedures in the context of the present study are discussed in the second section. The final section focuses on the clinical and research implications of this study.

Discussion of the Findings

Overall Effectiveness of Assertiveness Training

The meta-analysis of the 21 assertiveness training studies yielded an overall effect size of .74. This estimate of treatment effectiveness indicates that the average person receiving assertiveness training was .74 standard deviations above the typical control group member on outcome measures of assertiveness. Converted into percentile terminology, the effect size of .74 shows that assertiveness training can be expected to move the average client from the 50th to the 77th percentile. It is interesting to note that the effect size for assertiveness training is similar to the effect size found for psychotherapy and for behavior modification therapies (Smith & Glass, 1976).

The decay of assertiveness training treatment effects over time was assessed by only two studies in the meta-analysis sample. Without a substantial number of delayed outcome assessments, it is impossible to estimate the long-term effectiveness of assertiveness training.

Obviously, reserachers should include some form of delayed assessment of treatment effectiveness in future investigations of assertiveness training. Until that information becomes available, proponents of assertiveness training can only advocate the short-term benefits of the procedure.

In the 21 studies, there were 29 self-report and 36 behavioral assessments of assertiveness. The average effect size associated with the self-report measures was .65 while the effect size for the behavioral outcomes was .80. The lack of difference between the effect sizes of self-report and behavioral measures demonstrates the interdependence of behavior and attitudes. This finding suggests that behavioral changes in assertiveness are accompanied by similar attitudinal changes.

The meta-analysis also assessed the impact of the type of control condition on the calculation of effect sizes. The effect size associated with studies that had no-treatment control groups was .85. Studies that used placebo control conditions had an average effect size of .63. This finding demonstrates that assertiveness training is effective regardless of whether it is contrasted with placebo or no-treatment control conditions.

Assertiveness Training Components

The results of the meta-analysis indicated the frequency that various assertiveness training components were used in the 21 studies. The components that were used in almost every study were instructions, modeling, behavior rehearsal, and coaching. Other assertiveness training components were used in conjunction with the core components but no regular pattern of additional components was discernable.

The effect sizes associated with the components of instructions, modeling, behavior rehearsal, and coaching were all approximately equal to the overall effect size. For components that were occasionally used in treatment programs, effect sizes ranged from .81 for homework to .54 for self-feedback. The components of taped modeling, covert rehearsal, cognitive restructuring, and bibliotherapy were used so infrequently that it is impossible to estimate effect sizes for these components. None of the assertiveness training components was significantly related to effect size.

The identification of instructions, modeling, behavior rehearsal, and coaching as the core components of assertiveness training help describe the typical training procedure. For example, therapists typically begin training by providing a general description of assertiveness and other response patterns (non-assertiveness and aggressiveness). Clients then might be asked to role-play a situation in which assertive responses are required. After the role-play scene, the therapist typically describes or models assertive responses. Clients practice these responses and their behavior is gradually shaped by the verbal reinforcement of the therapist. This pattern of training would be repeated until the client exhibits assertive behavior.

In all the studies, other components were added to the basic four components. Noticeably missing from many studies were cognitive restructuring strategies and components (bibliotherapy, homework) designed to generalize the effects of training to other settings. Rich and Schroeder (1976) proposed that any effective assertiveness training program must contain at least one procedure from each of the following component sets: response-acquisition (instructions, modeling), response-

reproduction (behavior rehearsal, covert rehearsal), response-shaping (video feedback, coaching, self-feedback, group feedback), cognitive restructuring strategies (e.g., Rational Emotive Therapy), and response-transfer operations (homework, bibliotherapy). With many of these components (cognitive and response-transfer operations) being used infrequently in assertiveness training studies, it is impossible to test Rich and Schroeder's proposition.

Therapist Characteristics

The meta-analysis assessed the relationship between treatment outcomes and the following therapist characteristics: number, sex, and level of training. Although the three therapist variables were not significantly related to treatment outcomes, there are certain trends in the data worthy of discussion. Studies that used two therapists reported larger effect sizes than studies that employed only one therapist. Developers of assertiveness training programs (Alberti & Emmons, 1974; Lange & Jakubowski, 1976) have suggested that two therapists offer the following advantages over one therapist: two therapists allow the subjects to observe two different models of assertiveness, the two therapists can supplement each other's work, and the evaluation of each session is facilitated with two therapists.

The effect size associated with studies that used only female therapists was approximately twice as large as effect sizes for male or male and female therapists. The effect size for studies with female therapists is possibly inflated because most of those studies involved the subjects who exhibited the greatest gains, non-assertive individuals. Also, previous studies (e.g., Hall, 1976; Parr, 1977) have supported the non-significance of the therapist's sex on treatment effectiveness.

There was no difference in effect sizes reported for studies that used student or professional counselors. Since assertiveness training is a relatively new procedure, it is likely that students and professional counselors do not significantly differ in their amount of experience with assertiveness training procedures. A better indicator for differentiating the expertise of therapists would be the type of preparation they received. Frequently, individuals call themselves assertiveness trainers after attending one or two training workshops. Researchers may desire to only use therapists that meet the guidelines for assertiveness trainers adopted by the Association for the Advancement of Behavior Therapy (see Alberti & Emmons, 1974).

Subject Characteristics

The meta-analysis considered the relationship between the following subject-related variables and treatment outcomes: the sex of the subjects, the number of subjects, the subjects' level of assertiveness, the age of the subjects, and the classification of subjects. The primary population used for the 21 studies was mixed sex groups of college students. There were an insufficient number of studies with aggressive individuals, psychiatric patients, alcoholics, and adolescents to accurately assess the impact of assertiveness training with those populations.

When the unit of analysis was the individual outcome, the entire group of subject variables was significantly related to treatment outcomes. When the subject variables were analyzed individually, the age variable was significantly related to effect size while the sex variable and the pretreatment level of assertiveness variable were nearly significant. For the age variable, subjects were classified into three levels: adolescent, college student, and adult. The majority of studies employed

college students as subjects. The effect size for studies with college students is approximately twice the size of the effect size associated with studies that used adolescents or adults. There are two possible reasons for the smaller effect size for adolescents and adults. First, with only a few studies investigating the effects of assertiveness training with these populations, it was impossible to obtain an accurate estimate of treatment effectiveness. Second, the studies with adults or adolescents usually did not involve "normal" populations rather these studies used aggressive, psychiatric, or alcoholic individuals. More studies need to be completed with different types of populations before the effectiveness of assertiveness training can be judged for these populations.

The subjects were classified into three pretreatment levels of assertiveness; non-assertive, aggressive, and not assessed. The studies with non-assertive subjects had an effect size that was twice as large as for studies with aggressive or randomly selected subjects. This finding is expected since non-assertive subjects have the most to gain from assertiveness training. This finding demonstrates that assertiveness training is most effective for individuals with social skill deficits.

The effect size for studies with male and female subjects was larger than the effect size for studies with only female or only male subjects. Assertiveness trainers have claimed that assertiveness training is more effective when both sexes compose the treatment group. Having both sexes in a training group allows for greater role-playing combinations and more opportunity to observe role models of both sexes.

The number of subjects per treatment condition varied considerably throughout the studies. Effect sizes remained relatively equivalent regardless of size of the treatment group. Although most assertiveness trainers recommend forming groups of five to seven clients, the results of this study failed to find a significant relationship between group size and treatment outcomes.

Distribution of Training

The amount of distribution of treatment time varied considerably among the studies. The average time distribution for the studies sampled was five-to-six sessions over a five-to-six week period for a total of eight-to-nine hours. The findings of the meta-analysis indicate that there is no significant relationship between the distribution of training time (number of weeks, hours, or sessions) and treatment outcomes. However, there is a trend in the data that suggests there may be an optimal treatment length. Effect sizes were largest at the following levels: six-to-seven sessions, six-to-seven weeks, and eight-to-nine hours. This finding must be viewed as tentative because of the small number of studies at each distribution level and the large variances associated with the largest effect sizes. Only through future research efforts can the optimal distribution of training be identified.

Publication Features

The meta-analysis of assertiveness training research findings was comprised of 15 journal articles and six dissertations that were published primarily in the late 1970's. There was no difference between effect sizes from journal studies or dissertations. This finding indicates that a reliance on published or unpublished assertiveness training research would not introduce a source of bias into a meta-analysis. For

the studies surveyed, the majority were titled as assertion or assertive training rather than assertiveness (this finding caused the author to ponder the choice of assertiveness training for this study). In general, none of the publication features was significantly related to treatment effectiveness.

Summary of Research Findings

The results of the meta-analysis provide information concerning assertiveness training that previous reviews were unable to do. First, the meta-analysis estimated the overall magnitude of treatment effectiveness. Second, the meta-analysis identified the frequency that various components were used in assertiveness training studies and their relationship to treatment outcomes. Third, the impact of various subject, therapist, and design characteristics on treatment effectiveness was estimated. With this information, researchers and clinicians have a better understanding of assertiveness training research. The implications of these findings will be discussed later in this chapter.

Criticisms of Meta-Analysis

The criticisms and limitations of meta-analysis have been described elsewhere (Cook & Leviton, 1980; Glass, 1976; Jackson, 1982). In this section, the criticisms of meta-analytic procedures that are applicable to this study are discussed. Also, the specific limitations of this meta-analysis are described in this section.

Critics of meta-analysis have questioned some of the statistical techniques that are frequently used. The first criticism involves whether it is appropriate to use individual outcomes as the unit of analysis. As noted in the second chapter, the procedure that uses individual outcomes as the unit of analysis assumes independence among

the individual findings even though the outcomes (within a study) are dependent. In this study, analyses were conducted using both the study and individual outcomes measures as the unit of analysis. Using both approaches allowed for a comparison of results obtained by both approaches. No significant differences in effect sizes calculated by the two procedures were indicated.

The second statistical criticism involves the importance of sample size in the calculation of effect sizes. Critics of meta-analyses have noted that effect sizes from studies with different sample sizes are usually given equal consideration. In this study, effect sizes were weighted according to the number of subjects to control for the influence of sample size. ✓

A third criticism of meta-analysis has been the practice of summing findings across outcome measures. For example, in the Smith and Glass study effect sizes were averaged across different constructs (e.g., anxiety, depression) that were computed by different methods (e.g., interviews, objective tests) or by different informants (e.g., patient, significant other, therapist). In this meta-analysis, the outcome measures were restricted to one construct. The outcome measures were behavioral and self-reported assessments of assertiveness. The meta-analysis determined that there was no difference in effect sizes computed from behavioral or self-report measures.

A fourth criticism of meta-analytic procedures is the practice of including studies of varying quality in the meta-analysis. As discussed in the second chapter, Glass (1976) has argued that poorly designed studies should not be disregarded because all studies can provide valuable information concerning the issue under question. In this meta-analysis,

the impact of design characteristics (i.e., type of control condition, reactivity of outcome measures) on effect size was found to be non-significant.

A fifth criticism is that meta-analysts have failed to determine the number of studies that are needed to perform a valid meta-analysis.

Glass (1976) offers the following answer

An ensuing question--what is the smallest number of studies required for a meta-analysis?--ought to be rephrased. The spirit of meta-analysis is that statistical methods aid perception; tables, graphs, simple descriptive measures of locations and spread, scatter diagrams, and regression surfaces reveal information not apparent to otherwise unaided perception. The question then becomes, How many studies can be read and integrated without resorting to statistical methods to reveal aggregate findings and relationships? The number is probably very small. (p. 362)

The primary criticism, or limitation, of this study is the small number of the studies that are used in the meta-analysis. The small sample size directly limits the ability to answer some of the questions raised in the first chapter. For example, the meta-analysis was unable ✓ to assess the long-term effectiveness of assertiveness training, the effectiveness of certain assertiveness training components (e.g., covert rehearsal, cognitive restructuring strategies), and the effectiveness of assertiveness training with certain populations (e.g., alcoholics, psychiatric patients). The inability to answer these questions is primarily due to the failure of assertiveness training researchers to investigate many of these issues.

There are several additional factors that influenced the sample size of this study. First, because of limited inter-library services, only 40% of the potentially useful dissertations on assertiveness training were obtained. Second, two studies failed to use appropriate measures of

assertiveness. Third, several studies failed to report enough information about their training procedures or about their statistical findings to determine whether the study would qualify for this meta-analysis. The inability of many studies to qualify for this meta-analysis illustrates the overall poor quality of many research studies in this area. The specific limitations of assertiveness training research will be discussed in the next section.

Although the small sample size inhibits the ability to answer some of the questions raised in the first chapter, one can be confident that the overall conclusions of this study are valid. Rosenthal (1980) devised a procedure that allows researchers to estimate the number of unretrived or unpublished studies averaging null results that would have to exist before the overall probability of a Type I error is brought to any desired level of significance (e.g., $p = .05$). For this meta-analysis, approximately 200 studies averaging a null result ($\bar{z} = .00$) would have to exist somewhere before the overall significance of assertiveness training could be attributed to sampling bias.

In summary, there are several limitations of meta-analytic procedures. This study attempted to control for these limitations by using the latest available strategies. The primary limitation of this study, the small sample size, was primarily attributed to the poor quality of assertiveness training research. The problems with research studies dealing with assertiveness training are discussed in the next section.

Critique of Assertiveness Training Research

Although meta-analysis is a quantitative review technique, valuable information concerning the quality of research in a topic area can be derived from the implementation of the meta-analysis. In this section,

the discussion focuses on some of the limitations of assertiveness training research.

First, assertiveness training researchers have paid little attention to the theoretical formulations underlying their training procedures. Assertiveness training programs are often designed without any consideration given to any theoretical framework. Frequently, researchers failed to provide any rationale for their choice of components or design of the assertiveness training program. Researchers often failed to provide a theoretical explanation of their findings. Assertiveness training researchers' emphasis has been on demonstrating the efficacy of the procedure and not theory building.

Second, the theoretical explanations that researchers used to explain findings from assertiveness training studies frequently failed to integrate such factors as external reinforcement, self-reinforcement, anxiety, and cognitive belief structures. As noted in the first chapter, there is no comprehensive theory that explains the development or modification of assertive skills. The gap between application and theory is quite noticeably in assertiveness training research.

Third, many assertiveness training researchers did an inadequate job of reporting their studies. In many studies, the following information was incompletely reported: the components used in the training procedures, the training level of the therapists, the length of training, and statistical findings. It is assumed that these researchers took account of these factors and failed to report this information.

There are other problems with this body of literature. These problems include the mislabeling of procedures as assertiveness training even though the studies investigate only single components, the large

number of dissertation studies that have not been published in more readily available sources, the insufficient number of investigations dealing with the impact of subject, design, and therapist characteristics on treatment outcomes, and the implementation of assertiveness training without regard to the presenting problems of the subjects.

In summary, as a relatively new research area assertiveness training researchers have failed to consider important theoretical issues. Research has focused on the application of assertiveness training rather than the factors underlying the development of assertive behavior. This critique of assertiveness training research was not intended to disregard the high quality of many studies but to illustrate some trends in assertiveness training research that need to be attended to.

Implications of this Study

Clinical Implications

The results of this study have the following implications for assertiveness training practitioners:

1. The major conclusion of this meta-analysis is that assertiveness training is an effective procedure for increasing individuals' levels of assertiveness. This finding will help clinicians justify the use of assertiveness training as an intervention for individuals with social skills deficits.
2. Clinicians need to be aware that the basic components of assertiveness training as defined in this study are instructions, modeling, behavior rehearsal, and coaching. Depending upon the presenting problems of clients, clinicians may desire to add other components to the four core components. Until future research assesses the

additive effect of other components, we cannot determine the most effective combination of procedures at this time.

3. Although therapist characteristics were not significantly related to treatment outcomes, clinicians may consider the use of two therapists, preferably one of each sex, when conducting assertiveness training. Also, clinicians should review the criteria set forth by the Association for the Advancement of Behavior Therapy (see Alberti & Emmons, 1974) to determine whether they meet the qualifications of an assertiveness trainer.

4. The results of the meta-analysis found that various subject variables were closely related to treatment effectiveness. This finding confirms the assertion that assertiveness training should not be used as an all purpose intervention. Specifically, clinicians need to consider the following findings. First, the effectiveness of assertiveness training has not been clearly demonstrated with psychiatric, alcoholic, or aggressive populations. Second, assertiveness training was found to be most effective when both male and female clients participated in the procedure. Third, assertiveness training is most effective when used with non-assertive individuals. Fourth, the size of the treatment group was not related to treatment effectiveness.

5. The amount of treatment time was not significantly related to treatment effectiveness. The average time distribution for the studies sampled was five-to-six sessions over five-to-six weeks for a total of eight-to-nine treatment hours. Clinicians may desire to use this time allotment until more information concerning optimal treatment length becomes available.

Research Implications

The results of this study have the following implications for researchers of assertiveness training:

1. Assertiveness training is a relatively new area of research. In the attempt to keep up with the public demand for assertiveness training, researchers ignored many basic theoretical and measurement issues and proceeded to assess the efficacy of the procedure. It is strongly recommended that researchers first attempt to bridge these formative issues before completing further investigations of assertiveness training.

There are many unanswered, or partially answered, questions concerning the development of assertive skills. Are assertiveness deficits due to a lack of requisite skills or lack of prior reinforcement? If individuals have assertive skills and fail to display them, what are the inhibiting factors? Does an increase in assertive responding produce a change in cognitions concerning assertiveness? Obviously, researchers need to determine the influence of behavioral and cognitive factors on assertiveness.

2. The difficulty in obtaining studies for the meta-analysis was in part due to the poor quality of many assertiveness training research studies. Researchers should consider the following list as the characteristics of a well designed and reported assertiveness training study:

- A. A well defined description of the components included in the procedure. This description should include the name of the components used, examples of the components, and the percentages of the training devoted to each. Also, researchers should provide on request a detailed description of the training.

B. A rationale for why various components were used and an explanation of why assertiveness training is being used with the population under consideration.

C. A description of the training of therapists. It would be preferable if researchers only employed therapists that were well acquainted with assertiveness training procedures.

D. Any assertiveness training study should have at least one measure of assertiveness. Also, the effect of treatment over time should be assessed.

E. A clear report of the statistical findings. The minimal statistics include sample size, means (adjusted and unadjusted), standard deviations, and significance levels of inferential tests.

F. The characteristics of subjects and therapists. Also, the method of assignment to treatment conditions should be described.

3. At some stage, researchers need to decide on what assertiveness training is. As it stands now, assertiveness training is an assorted collection of behavioral and cognitive procedures. The findings from this study identified four core components. Researchers may want to call a conference meeting at a national convention (e.g., American Psychological Association, Association for the Advancement of Behavior Therapy) to describe the status of assertiveness training research and decide on the future direction of the field.

4. It would be beneficial if researchers could decide on the same name for this procedure. The terms assertion, assertive, and assertiveness training are frequently used interchangeably. The lack of agreement on a name for the procedure illustrates the need for communication among researchers.

APPENDIX A

STUDIES NOT INCLUDED IN THE META-ANALYSIS
AND REASONS FOR EXCLUSION

Study
<u>Assertiveness Training Components Only</u>
Aiduk & Karoly, 1975
Briedenbach, 1977
Derry & Stone, 1979
Epstein, Deciouanni, & Jayne-Lazarus, 1975
Field & Test, 1975
Freundlich, 1977
Hammen, Jacobs, Mayol, & Cochran, 1980
Henderson, 1976
Hersen, Eisler, & Miuer, 1974
Hersen, Eisler, Miuer, Johnson, & Pinkston, 1973
Hinson-Zeiger, 1973
Jacobs & Cochran, 1982
Kazdin, 1974
Kazdin, 1976
Kazdin, 1980
Kirkland, 1978
Kirschner, 1970
Lang, 1976
Cogin & Rooney, 1975
Mastria, 1975
McFall & Lillesand, 1971
McFall & Marston, 1970
McFall & Twentyman, 1973
McKellar, 1977
Nietzel, Martorano, & Melnick, 1977

Study

Parr, 1974
 Pentz, 1981
 Steel, 1977
 Thelen & Casoski, 1980
 Turner, 1976
 Thelen & Casoski, 1980
 Turner & Adams, 1977
 Twentyman, Gibraltar, & Inz, 1979
 Vorgin & Kassino, 1979
 Weiskott & Cleveland, 1977
 Wolfe & Fodor, 1977
 Zeiger, 1974
 Zielinski & Williams, 1979

No Control Condition

Keating, 1975
 Rehm, Fuchs, Roth, Kornblith, & Romano, 1979

No Appropriate Measures

Fagan, 1979
 Freedberg & Johnston, 1981
 Glassman, 1977

Not Enough Data Reported for Coding Purposes

Bander, Russell, & Weiskott, 1978
 Berah, 1981
 Janda & Rimm, 1977
 Mischel, 1978
 Rotheram & Armstrong, 1980
 Sanchez, Lewinson, & Larson, 1980

Not Applicable

Alden, Safran, & Weidman, 1978
 Cantone, 1978
 Grimes, 1978

APPENDIX B

INTERRATER AGREEMENT COEFFICIENTS FOR THE CODING OF STUDY CHARACTERISTICS

Study Characteristics	Interrater Agreement Coefficients
Instructions	.91
Modeling - Live	.77
Modeling - Taped	.82
Behavior Rehearsal	.91
Covert Rehearsal	.82
Taped Feedback	.86
Coaching	.86
Self-Feedback	.72
Group Feedback	.86
Cognitive Restructuring	.95
Homework	.86
Bibliotherapy	1.00
Number of Therapists	.91
Therapist Training	1.00
Sex of Therapists	.91
Subjects' Classification	1.00
Subjects' Assertiveness	.95
Age of Subjects	1.00
Number of Subjects	.91
Sex of Subjects	1.00

Study Characteristics	Interrater Agreement Coefficients
Control Condition	.91
Type of Outcome	1.00
Time of Assessment	1.00
Number of Sessions	1.00
Number of Weeks	1.00
Number of Hours	1.00
Publication Source	1.00
Year of Publication	1.00
Name of Procedure	1.00

Note: Two raters; 22 studies.

APPENDIX C

CODING OF STUDIES USED IN THE META-ANALYSIS

Study Characteristic	Instructions	Modeling-Live	Modeling-Taped	Behavior Rehearsal	Covert Rehearsal	Taped Feedback	Coaching	Self-Feedback	Group Feedback	Cognitive Restructuring	Homework	Bibliotherapy	Number of Therapists	Therapist Training	Sex of Therapists	Subjects' Classification	Subjects' Assertiveness	Age of Subjects	Number of Subjects	Sex of Subjects	Control Condition	Type of Outcomes	Time of Outcomes	Number of Sessions	Number of Weeks	Number of Hours	Source of Publication	Year of Publication	Name of Procedure
Study																													
Ball	Y	Y	N	Y	N	Y	Y	Y	N	N	Y	N	2	S	F	N	R	C	5	F	N	S	1	6	6	12	D 76	1	
Brazelton	Y	Y	N	Y	Y	N	Y	N	Y	N	N	N	1	S	M	N	R	C	9	B	N	S	1	2	1	8	D 76	3	
Brockway	Y	Y	N	Y	N	N	N	Y	Y	N	Y	N	2	S	F	N	R	A	5	F	N	B	1	7	7	14	J 76	3	
Brown (a)	Y	N	Y	Y	N	Y	Y	N	N	N	N	N	2	P	B	N	N	C	1	B	N	B	1	2	2	2	J 80	2	
Brown (b)	Y	N	Y	Y	N	N	Y	N	N	N	N	N	2	P	B	N	N	C	1	B	N	B	1	2	2	2	J 80	2	
Carmody (a)	Y	Y	N	Y	N	N	Y	N	N	N	N	N	2	S	M	R	C	5	B	N	C	1	4	4	6	J 78	2		
Carmody (b)	Y	Y	N	Y	N	N	Y	N	Y	N	N	N	2	S	M	R	C	5	B	N	C	1	4	4	6	J 78	2		
Fielder, et al.	Y	Y	Y	Y	N	Y	Y	N	Y	N	N	N	2	P	B	P	R	A	12	B	P	B	1	4	2	4	J 79	3	
Friedman	Y	Y	N	Y	N	N	Y	N	N	N	N	N	2	S	T	P	R	A	5	B	P	C	2	8	8	12	D 76	2	
Galassi, Gallassi, & Litz	Y	N	Y	Y	N	Y	Y	N	Y	N	Y	Y	2	S	B	N	N	C	8	B	N	C	3	8	4	12	J 74	3	
Gormally, et al (a)	Y	Y	N	Y	N	Y	Y	Y	N	N	N	N	2	P	B	N	N	C	1	F	P	B	1	1	1	2	J 75	2	

Study Characteristic	Instructions	Modeling-Live	Modeling-Taped	Behavior Rehearsal	Covert Rehearsal	Taped Feedback	Coaching	Self-Feedback	Group Feedback	Cognitive Restructuring	Homework	Bibliotherapy	Number of Therapists	Therapist Training	Sex of Therapists	Subjects' Classification	Subjects' Assertiveness	Age of Subjects	Number of Subjects	Sex of Subjects	Control Condition	Type of Outcomes	Time of Outcomes	Number of Sessions	Number of Weeks	Number of Hours	Source of Publication	Year of Publication	Name of Procedure
Study																													
Gormally, et al. (b)	Y	Y	N	Y	N	N	Y	Y	N	N	N	N	2	P	B	N	N	N	C	1	F	P	B	1	1	1	2	J 75	2
Holmes & Horan	N	Y	N	Y	N	N	Y	N	N	N	N	N	1	S	M	N	N	N	C	1	F	P	C	1	4	2	2	J 76	2
Jansen & Litwack	Y	Y	N	Y	N	N	Y	N	N	N	1	1	1	P	M	N	N	R	C	15	B	P	S	1	6	10	18	J 79	3
Joanning	Y	Y	N	Y	N	N	Y	N	N	N	N	Y	2	P	F	N	N	N	C	9	B	N	C	1	6	6	9	J 76	2
Layne, Layne, & Schoch	Y	N	N	Y	N	Y	Y	Y	Y	N	Y	N	1	S	M	N	N	R	C	13	B	N	C	1	4	4	6	J 77	3
Lee, Hauberg, & Hassard	Y	Y	N	Y	Y	N	Y	N	Y	N	N	N	1	S	F	N	A	A	10	B	B	C	1	8	8	7	J 79	2	
McKellar	Y	Y	N	Y	N	N	Y	N	Y	N	N	N	1	S	M	N	N	N	C	7	B	N	S	1	5	5	5	D 78	3
Rathus	Y	N	N	Y	N	N	Y	Y	Y	N	Y	N	1	P	M	N	N	R	C	6	S	B	C	1	7	7	7	J 72	3
Rimm, et al.	Y	Y	N	Y	N	N	Y	Y	Y	N	N	N	3	S	B	N	A	C	C	6	M	B	C	1	6	3	8	J 74	3
Russell & Winkler	Y	Y	N	Y	N	N	N	N	N	N	Y	N	1	P	M	N	R	A	13	M	P	S	1	5	5	5	J 77	3	
Scherer & Freedberg (a)	Y	Y	N	Y	N	N	Y	N	Y	N	N	N	2	P	B	A	A	A	3	7	B	N	S	1	6	3	12	J 76	1

Study Characteristic	Instructions	Modeling-Live	Modeling-Taped	Behavior Rehearsal	Covert Rehearsal	Taped Feedback	Coaching	Self-Feedback	Group Feedback	Cognitive Restructuring	Homework	Bibliotherapy	Number of Therapists	Therapist Training	Sex of Therapists	Subjects' Classification	Subjects' Assertiveness	Age of Subjects	Number of Subjects	Sex of Subjects	Control Condition	Type of Outcomes	Time of Outcomes	Number of Sessions	Number of Weeks	Number of Hours	Source of Publication	Year of Publication	Name of Procedure
<u>Study</u>																													
Scherer & Freedberg (b)	Y	Y	N	Y	N	Y	Y	N	Y	N	N	N	2	P	B	A	A	3	7	B	N	S	1	6	3	12	J 76	1	
Tiegerman & Kassinoue (a)	Y	N	N	Y	N	N	Y	Y	Y	N	Y	N	1	P	M	N	R	C	5	B	B	S	1	12	12	12	J 77	3	
Tiegerman & Kassinoue (b)	Y	N	N	Y	N	N	Y	Y	Y	Y	Y	Y	1	P	M	N	R	C	5	B	B	S	1	12	12	12	J 77	3	
Thibodeau	Y	Y	N	Y	Y	N	Y	N	Y	N	Y	N	2	P	B	N	R	C	12	B	N	S	1	4	2	8	D 76	3	
Wall	Y	Y	N	Y	N	N	Y	N	Y	N	Y	N	1	S	F	N	R	A	11	F	N	C	1	6	6	12	D 77	2	

Note. Refer to criteria listed for each variable in Chapter III.

REFERENCES

- Adinolfi, A. A., McCourt, W. F., & Geoghegan, S. Group assertiveness training for alcoholics. Journal of Studies on Alcohol, 1976, 37, 311-320.
- Aiduk, R., & Karoly, P. Self-regulatory techniques in the modification of nonassertive behavior. Psychological Reports, 1975, 36, 895-905.
- Alberti, R. E., & Emmons, M. L. Your perfect right: A guide to assertive behavior (2nd ed.). San Luis Obispo, California: Impact, 1974.
- Alden, L., & Safrian, J. Irrational beliefs and non-assertive behavior. Cognitive Therapy and Research, 1978, 2, 357-364.
- Alden, L., Safrian, J., & Weideman, R. A comparison of cognitive and skills training strategies in the treatment of unassertive clients. Behavior Therapy, 1978, 9, 843-846.
- Arnold, B. R., Winrich, W. W., & Dawley, H. H. Assertive training employing anxiety relief and behavioral rehearsal. Newsletter for Research in Mental Health and Behavioral Sciences, 1973, 15, 22-24.
- Bach, R. C., Lowry, D., & Moylan, J. J. Training state hospital patients to be appropriately assertive. Proceedings of the 80th Annual Convention of the American Psychological Association, 1973, 7, Pt. 1, 383-384.
- Ball, P. G. The effect of group assertiveness training on selected measures of self-concept for college women (Doctoral dissertation, University of Tennessee, 1976). Dissertation Abstracts International, 1976, 37, 2731A. (University Microfilms No. 76-10439)
- Bander, R. S., Russell, R. K., & Weiskott, G. N. Effects of varying amounts of assertive training on level of assertiveness and anxiety reduction in women. Psychological Reports, 1978, 43, 144-146.
- Bellack, A. S., Hersen, M., & Lamparski, D. Role play tests for assessing skills: Are they valid? Journal of Consulting and Clinical Psychology, 1979, 47, 335-342.
- Berach, E. F. Influence of scheduling variations on the effectiveness of a group assertion--training program for women. Journal of Counseling Psychology, 1981, 28, 265-268.

- Bettis, S. R. Assertiveness training for widowed women (Doctoral dissertation, University of Oregon, 1978). Dissertation Abstracts International, 1978, 39, 1040B. (University Microfilms No. 78-11171)
- Booraem, C. D., & Flowers, J. U. Reduction of anxiety and personal space as a function of assertion training with severely disturbed neuropsychiatric inpatients. Psychological Reports, 1972, 30, 923-929.
- Boulanger, D. F. The relationship of ability and instructional constructs to learning in science and general education. Paper presented at the annual meeting of the American Educational Research Association, Boston, April, 1980.
- Brazelton, M. J. Behavior rehearsal and cognitive procedures: An investigation of the relative effectiveness of two components of assertion training (Doctoral dissertation, University of Alabama, 1976). Dissertation Abstracts International, 1976, 38, 3282A. (University Microfilms No. 77-25860)
- ✓ Bridenbach, W. E. The effects of assertive training on the adolescent self-concept (Doctoral dissertation, University of Northern Colorado, 1978). Dissertation Abstracts International, 1978, 38, 4671A-4672A. (University Microfilms No. 77-30802)
- Brockway, B. S. Assertive training for professional women. Social Work, 1976, 21, 498-505.
- Brown, S. D. Videotape feedback: Effects on assertive performance and subjects' perceived competence and satisfaction. Psychological Reports, 1980, 47, 455-461.
- Buell, G. J. The applicability of assertive training to the problems of childhood (Doctoral dissertation, Southern Illinois University, 1976). Dissertation Abstracts International, 1976, 36, 6372B. (University Microfilms No. 76-13227)
- Butler, P. Self assertion for women: A guide to becoming androgynous. San Francisco: Canfield Press, 1976.
- Buttrum, S. M. The use of behavioral rehearsal, modeling, projected consequences and cognitive modification in assertive training (Doctoral dissertation, University of Western Ontario, 1975). Dissertation Abstracts International, 1975, 35, 6087B. (Order from National Library of Canada, Ottawa)
- Carlson, B. C. The effects of an assertion training group on the assertiveness and self-concept of student nurses (Doctoral dissertation, United States International University, 1976). Dissertation Abstracts International, 1976, 37, 1426B. (University Microfilms No. 76-19749)

- Carmody, T. P. Rational-emotive, self-instructional, and behavioral assertion training: Facilitating maintenance. Cognitive Therapy and Research, 1978, 2, 241-253.
- Chittenden, G. E. An experimental study in measuring and modifying assertive behavior in young children. Monographs of the Society for Research in Child Development, 1942, 7(1), Serial 31.
- Cohen, P. A. Student ratings of instruction and student achievement: A meta-analysis of multisection validity studies. Review of Educational Research, 1981, 51, 281-309.
- Cohen, P. A., Kulik, J. A., & Kulik, C. C. Educational outcomes of tutoring: A meta-analysis of findings. American Educational Research Journal, 1982, 19, 237-258.
- Conoley, C. W. The effects of vicarious reinforcement in assertive training on assertive behavior, anxiety and food intake of under-assertive obese females (Doctoral dissertation, University of Texas, 1976). Dissertation Abstracts International, 1976, 37, 2497B. (University Microfilms No. 76-26614)
- Cook, T. D., & Leviton, L. C. Reviewing the literature: A comparison of traditional methods with meta-analysis. Journal of Personality, 1980, 48, 449-472.
- ✓ DeLange, J. M., Lanham, S. L., & Barton, J. A. Social skills training for juvenile delinquents: Behavioral skill training and cognitive techniques. In D. Upper & S. Ross (Eds.), Behavior group therapy. Champaign, Illinois: Research Press, 1981.
- Derry, P. A., & Stone, G. L. Effects of cognitive-adjunct treatments on assertiveness. Cognitive Therapy and Research, 1979, 3, 213-221.
- ✓ Doran, L. E. The effect of assertion training within a career awareness course on the sex-role, self-concepts and career choices of high school women (Doctoral dissertation, University of Illinois, 1977). Dissertation Abstracts International, 1979, 37, 6270A-6271A. (University Microfilms No. 77-8976)
- Duehn, W. D., & Mayadas, N. W. The use of stimulus modeling videotapes in assertive training for homosexuals. Journal of Homosexuality, 1976, 1, 373-381.
- Edelstein, B. A., & Eisler, R. M. Effects of modeling and modeling with instructionals and feedback in the behavioral components of social skills. Behavior Therapy, 1976, 7, 382-389.
- Edwards, N. B. Case conference assertive training in a case of homosexual pedophilia. Journal of Behavior Therapy and Experimental Psychiatry, 1972, 3, 55-63.

- Eichenbaum, L. A. The effects of same-sex versus mixed-sex assertion training groups on assertiveness sex-role attitudes and locus of control beliefs of women (Doctoral dissertation, University of Southern California, 1978). Dissertation Abstracts International, 1978, 39, 2493B. (University Microfilms No.
- Eisler, R.M., Frederiksen, L., & Peterson, G. The relationship of cognitive variables to the expression of assertiveness. Behavior Therapy, 1978, 9, 419-427.
- Eisler, R. M., Hersen, M., & Miller, P. M. Effects of modeling on components of assertive behavior. Journal of Behavior Therapy and Experimental Psychiatry, 1973, 4, 1-6.
- Eisler, R. M., Hersen, M., Miller, P. M., & Blanchard, E. B. Situational determinants of assertive behaviors. Journal of Consulting and Clinical Psychology, 1975, 43, 330-340.
- Ellis, A., & Harper, R. A. A new guide to rational living. Englewood Cliffs, New Jersey: Prentice-Hall, 1975.
- El-Shamy, S. Small group assertion training: Effects of time-spacing on outcomes. Small Group Behavior, 1978, 9, 393-402.
- Epstein, N., Degioanni, I. S., & Jayne-Lazarus, C. Assertion training for couples. Journal of Behaviour Therapy and Experimental Psychiatry, 1978, 9, 149-155.
- Fagan, M. M. Alleviated depression: The efficacy of group psychotherapy and group assertive training. Small Group Behavior, 1979, 10, 136-151.
- Fensterheim, H. Behavior therapy: Assertive training in groups. In R. D. Rubin, C. J. Sager & H. S. Kaplan (Eds.), Progress in group and family therapy. New York: Brunner/Mazel, 1972.
- Fiedler, D., & Beach, L. R. On the decision to be assertive. Journal of Consulting and Clinical Psychology, 1978, 46, 536-546.
- Fiedler, P. E., Orenstein, H., Chiles, J., Fritz, G., & Breitt, S. Effects of assertive training on hospitalized adolescents and young adults. Adolescence, 1979, 14, 523-527.
- Field, G. D., & Test, M. A. Group assertive training for severely disturbed patients. Journal of Behavior Therapy and Experimental Psychiatry, 1975, 6, 129-133.
- Finch, B. E., & Wallace, C. J. Successful interpersonal skills training with schizophrenic in-patients. Journal of Consulting and Clinical Psychology, 1977, 45, 885-870.

- Foy, D. W., Eisler, R. M., & Pinkston, S. Modeled assertion in a case of explosive rages. Journal of Behavior Therapy and Experimental Psychiatry, 1975, 6, 135-137.
- Foy, D. W., Miller, M., Eisler, R. M., & O'Toole, D. H. Social skills training to teach alcoholics to refuse drinks effectively. Journal of Studies on Alcohol, 1976, 37, 1340-1345.
- Freedberg, D. E. J., & Johnston, W. E. Effects of assertion training within context of a multi-modal alcoholism treatment program for employed alcoholics. Psychological Reports, 1981, 48, 379-386.
- Friedman, E. S. Assertion training (Doctoral dissertation, University of Northern Colorado, 1976). Dissertation Abstracts International, 1976, 37, 2074A. (University Microfilms No. 76-23176).
- Galassi, J. P., Galassi, M. D., & Litz, M. C. Assertive training in groups using video feedback. Journal of Counseling Psychology, 1974, 21, 390-394.
- Galassi, J. P., DeLo, J. S., Galassi, M. D., & Bastien, S. The college self expression scale: A measure of assertiveness. Behavior Therapy, 1974, 5, 165-171.
- Galassi, M. D., & Galassi, J. P. Assertion: A critical review. Psychotherapy: Therapy, Research, and Practice, 1978, 15, 16-29.
- Gambrill, E. D., & Richey, C. A. An assertion inventory for use in assessment and research. Behavior Therapy, 1975, 6, 550-561.
- Gentile, A. S. Assertive behavior in an aggressive environment. Paper presented at the Western Psychological Association, San Francisco, 1977.
- Glass, G. U. Primary, secondary, and meta-analysis of research. Educational Researcher, 1976, 5, 3-8.
- Glass, G. U. Integrating findings. The meta-analysis of research. Review of Research in Education, 1978, 5, 351-379.
- Glass, G. U., & Smith, M. L. Meta-analysis of research on class size and achievement. Educational Evaluation and Policy Analysis, 1979, 1, 2-16.
- Gormally, J., Hill, C. E., Otis, M., & Rainey, L. A microtraining approach to assertion training. Journal of Counseling, 1975, 22, 299-303.
- Greenwald, A. G. Consequences of prejudice against the null hypothesis. Psychological Bulletin, 1975, 82, 1-20.

- Gutride, M. E., Goldstein, A. P., & Hunter, G. F. The use of modeling and role playing to increase social interaction among asocial psychiatric patients. Journal of Consulting and Clinical Psychology, 1973, 40, 408-415.
- Haertel, G. D. The social environment of the classroom and learning in science and other classes. Paper presented at the annual meeting of the American Educational Research Association, Boston, April, 1980.
- Hall, B. A. The effect of sex of the leader on the development of assertiveness in women undergoing group assertive training (Doctoral dissertation, University of Missouri, 1976). Dissertation Abstracts International, 1976, 36, 7208A. (University Microfilms No. 76-11488)
- Hammen, C. L., Jacobs, M., Mayol, A., & Cochran, S. D. Dysfunctional cognitions and the effectiveness of skills and cognitive-behavioral assertion training. Journal of Consulting and Clinical Psychology, 1980, 48, 685-695.
- Hanson, R., & Bencomo, A. Adapting a structured assertion training program to a group of chronic psychiatric patients. Newsletter for Research in Psychology, 1972, 14, 17-18.
- Hartley, S. S. Meta-analysis of the effects of individually paced instruction in mathematics (Doctoral dissertation, University of Colorado, 1977). Dissertation Abstracts International, 1977, 38, 4003A. (University Microfilms No. 77-29926)
- ✓ Hazel, J. S., Schumaker, J. B., Keuhn, F., Shennan, J. A., & Sheldon-Wildgen, J. An analysis of a group training program for teaching social and problem-solving skills to delinquent youths. Paper presented at the Association for Advancement of Behavior Therapy, San Francisco, 1979.
- ✓ Hedges, L. U. Distribution theory for Glass's estimator of effect size and related estimators. Journal of Educational Statistics, 1981, 6, 107-128.
- Hedquist, F. J., & Weinhold, B. H. Behavioral group counseling with socially anxious and unassertive college students. Journal of Counseling Psychology, 1970, 12, 237-242.
- Heimberg, R. G., Montgomery, D., Madsen, C. H., & Heimberg, J. S. Assertion training: A review of the literature. Behavior Therapy, 1977, 8, 953-971.
- Hersen, M., Eisler, R. M., & Miller, P. M. On experimental analysis of generalization in assertive training. Behaviour Research and Therapy, 1975, 12, 295-310.

- Hersen, M., Eisler, R. M., Miller, P. M., Johnson, M. B., & Pinkston, S. G. Effects of practice, instructions, and modeling on components of assertive behavior. Behaviour Research and Therapy, 1973, 11, 443-451.
- Hirsch, S. M., Von Rosenberg, R., Phelan, C., & Dudley, H. K. Effectiveness of assertiveness training with alcoholics. Journal of Studies on Alcohol, 1978, 39, 89-97.
- Holmes, D. P., & Horan, J. J. Anger induction in assertion training. Journal of Counseling Psychology, 1976, 23, 108-111.
- Hutchinson, G. E. Modeling and response playback in assertion training (Doctoral dissertation, University of Western Ontario, 1977). Dissertation Abstracts International, 1977, 37, 5356B. (Order from National Library of Canada, Ottawa)
- Jackson, G. B. Methods for integrative reviews. Review of Educational Research, 1980, 50, 438-460.
- Jacobs, M. K., & Cochran, S. D. The effects of cognitive restructuring on assertive behavior. Cognitive Therapy and Research, 1982, 6, 63-76.
- Jakubowski-Spector, P. Facilitating the growth of women through assertive training. Counseling Psychologist, 1973, 4, 75-86.
- Janda, L. H., & Rimm, D. C. Type of situation and sex of counselor in assertive training. Journal of Counseling Psychology, 1977, 24, 444-447.
- Jansen, M. A., & Litwack, L. The effects of assertive training on counselor trainees. Counselor Education and Supervision, 1979, 19, 27-33.
- Joanning, H. Behavior rehearsal in group treatment of socially non-assertive individuals. Journal of College Student Personnel, 1976, 17, 313-318.
- Johnson, D. W., Maruyama, G., Johnson, R., Nelson, D., & Skon, L. Effects of cooperative, competitive, and individualistic goal structures on achievement: A meta-analysis. Psychological Bulletin, 1981, 89, 47-62.
- Kazdin, A. E. Effects of covert modeling and model reinforcement on assertive behavior. Journal of Abnormal Psychology, 1974, 33, 240-252.
- Kazdin, A. E. Effects of covert modeling, multiple models, and model reinforcement on assertive behavior. Behavior Therapy, 1976, 7, 211-222.

- ✓ Kirkland, K. D. The effects of group assertion training on the development and maintenance of assertive skills in unassertive adolescents (Doctoral dissertation, University of Missouri, 1978). Dissertation Abstracts International, 1978, 39, 4038B. (University Microfilms No. 79-0319)
- Kirschner, N. M. Generalization of behaviorally oriented assertive training. Psychological Record, 1976, 26, 117-125.
- Knauss, J. W. The effects of group assertiveness training on the aggressive behavior and self-concepts of fourth-grade boys (Doctoral dissertation, University of Tennessee, 1977). Dissertation Abstracts International, 1977, 38, 5356A. (University Microfilms No. 78-02014)
- 7 Kornfeld, J. L. Assertive training with juvenile delinquents (Doctoral dissertation, University of Southern California, 1974). Dissertation Abstracts International, 1974, 35, 1501A-1502A. (University Microfilms No. 74-17354)
- Kulik, J. A., Kulik, C. L., & Cohen, P. A. A meta-analysis of outcome studies of Keller's personalized system of instruction. American Psychologist, 1979, 34, 307-318.
- Landman, J. T., & Dawes, R. M. Psychotherapy outcome: Smith and Glass's conclusions stand up under scrutiny. American Psychologist, 1982, 37, 504-516.
- Lang, P. H. The use of feedback and behavioral assignments in assertive training groups for women (Doctoral dissertation, University of Georgia, 1977). Dissertation Abstracts International, 1977, 37, 3617B. (University Microfilms No. 76-29541)
- Lange, A. J., & Jakubowski, P. Responsible assertive response. Champaign, Illinois: Research Press, 1976.
- Layne, R. G., Layne, B. H., & Schoch, E. W. Group assertive training for resident assistants. Journal of College Student Personnel, 1977, 18, 393-397.
- Lazarus, A. On assertive behavior: A brief note. Behavior Therapy, 1973, 4, 697-699.
- Leah, J. A., Law, H. G., & Snyder, C. W. The structure of self-reported difficulty in assertiveness: An application of three-mode common factor analysis. Multivariate Behavioral Research, 1979, 14, 443-462.
- ✓ Lee, D. Y., Hallberg, E. T., & Hassard, H. Effects of assertion training on aggressive behavior of adolescents. Journal of Counseling Psychology, 1979, 26, 259-261.

- Linehan, M.M. Group versus individual assertion training. Journal of Consulting and Clinical Psychology, 1979, 47, 1000-1002.
- Linehan, M. M., Goldfried, M. R., & Goldfried, A. D. Assertion therapy: Skill training or cognitive restructuring. Behavior Therapy, 1979, 10, 372-388.
- Lomont, J. F., Gilner, F. H., Spector, N. J., & Skinner, K. K. Group assertion training and group insight therapies. Psychological Reports, 1969, 25, 463-470.
- Longin, H. E., & Rooney, W. M. Teaching denial assertion to chronic hospitalized patients. Journal of Behavior Therapy and Experimental Psychiatry, 1975, 6, 219-222.
- Loo, R. M. The effects of projected consequences and overt behavior rehearsal on assertive behavior (Doctoral dissertation, University of Illinois, 1972). Dissertation Abstracts International, 1972, 32, 5448B. (University Microfilms No. 72-6988)
- Lorr, M., & More, W. W. Four dimensions of assertiveness. Multivariate Behavioral Research, 1980, 2, 127-138.
- Manderino, M. A. Effects of a group assertive training procedure on undergraduate women (Doctoral dissertation, Arizona State University, 1974). Dissertation Abstracts International, 1974, 35, 1389B. (University Microfilms No. 74-20139)
- Martorano, R. P. Effects of assertive and non-assertive training on alcohol consumption mood and socialization in the chronic alcoholic. Quarterly Journal of Studies on Alcohol, 1974, 35, 445-447.
- McFall, R. M., & Lillesand, D. B. Behavior rehearsal with modeling and coaching in assertion training. Journal of Abnormal Psychology, 1971, 77, 313-323.
- McFall, R. M., & Marston, A. R. An experimental investigation of behavior rehearsal in assertive training. Journal of Abnormal Psychology, 1970, 76, 295-303.
- McFall, R. M., & Twentyman, C. T. Four experiments on the relative contributions of rehearsal, modeling, and coaching to assertion training. Journal of Abnormal Psychology, 1973, 81, 199-218.
- McGovern, C. J. The relative efficacy of bibliotherapy and assertion training on assertiveness levels of a general population and a library personnel population (Doctoral dissertation, Northwestern University, 1977). Dissertation Abstracts International, 1977, 37, 6954A-6955A. (University Microfilms No. 77-10064)
- McGraw, B., & Glass, G. U. Choice of the metric for effect size in meta-analysis. American Education Research Journal, 1980, 17, 325-337.

- McKellar, C. P. The effects of assertive behavior training in college sophomores and graduate students (Doctoral dissertation, Memphis State University, 1977). Dissertation Abstracts International, 1977, 38, 4054A. (University Microfilms No. 77-28796)
- McKinlay, T., Kelly, J. A., & Patterson, J. Teaching assertive skills to a passive homosexual adolescent: An illustrative case study. Journal of Homosexuality, 1977, 3, 163-169.
- McMillan, M. M. Relative efficacy of assertive training and self control procedures in a weight control program (Doctoral dissertation, Arizona State University, 1976). Dissertation Abstracts International, 1976, 36, 4264A-4265A. (University Microfilms No. 75-29919)
- Meichenbaum, D. H. Cognitive behavior modification. Morristown, New Jersey: General Learning Press, 1974.
- Mills, C. L. The use of modeling, coaching, and behavior rehearsal in assertive training as therapy with a group of men at a correctional institution (Doctoral dissertation, Kansas State University, 1978). Dissertation Abstracts International, 1978, 39, 2511B. (University Microfilms No. 78-21876)
- Mischel, M. H. Assertion training with handicapped persons. Journal of Counseling Psychology, 1978, 25, 238-241.
- Mosteller, F. M., & Tukey, J. W. Data analysis, including statistics. In G. Linzey & E. Aronson (Eds.), Handbook of social psychology (2nd ed.). Reading, Massachusetts: Addison-Wesley, 1968.
- Nietzel, M. T., & Bernstein, D. A. The effects of instructionally mediated demand upon the behavioral assessment of assertiveness. Journal of Consulting and Clinical Psychology, 1976, 44, 500.
- Nietzel, M. T., Martorano, R. D., & Melnick, J. The effects of covert modeling with and without reply training on the development and generalization of assertive responses. Behavior Therapy, 1977, 8, 183-192.
- O'Connor, R. D. Modification of social withdrawal through symbolic modeling. Journal of Applied Behavior Analysis, 1969, 2, 15-22.
- Palmer, M. P. The mouse, monster, and me. San Luis Obispo, California: Impact, 1977.
- ✓ Parr, G. D. The effects of modeling, behavior rehearsal and counselor sex in assertive counseling with adolescents (Doctoral dissertation, University of Colorado, 1975). Dissertation Abstracts International, 1975, 35, 5035A-5036A. (University Microfilms No. 75-03816)

Patterson, R. L. Time out and assertive training for a dependent child. Behavior Therapy, 1972, 3, 466-68.

✓ Pentz, M. A. Assertion training and trainer effects on unassertive and aggressive adolescents. Journal of Counseling Psychology, 1980, 27, 76-83.

Percell, L. P., Berwick, P. T., & Beigel, A. The effects of assertive training on self concept and anxiety. Archives of General Psychiatry, 1974, 31, 502-504.

Peterson, P. L. Directed instruction reconsidered. In P. L. Peterson & H. L. Walberg (Eds.), Research on teaching. Berkeley, California: McCutchan, 1979.

Phelps, S., & Austin, N. The assertive woman. San Luis O'bispo, California: Impact, 1975.

Phinney, A. L. The effects of assertion training and bibliotherapy with married women (Doctoral dissertation, State University of New York, 1977). Dissertation Abstracts International, 1977, 38, 2879B. (University Microfilms No. 77-274420)

Prout, M. F. An analogue study assessing the effects of three training procedures on nonverbal assertive behavior (Doctoral dissertation, American University, 1974). Dissertation Abstracts International, 1974, 35, 1925B-1926B. (University Microfilms No. 73-22275)

Rakos, R. F. Content consideration in the distinction between assertive and aggressive behavior. Psychological Reports, 1979, 44, 767-773.

Rathus, S. A. An experimental investigation of assertive training in a group setting. Journal of Behavior Therapy and Experimental Psychiatry, 1972, 3, 81-86.

Rathus, S. A. A 30-item scheduling for assessing assertive behavior. Behavior Therapy, 1973, 4, 398-406.

✓ Rausbaum-Selig, M. Assertiveness training with young people. School Counselor, 1976, 24, 115-123.

Reese, D., & Resick, P. A. An exploration of individual and group assertion training for children. Paper presented at the Association for the Advancement of Behavior Therapy, San Francisco, 1979.

Rich, A. R. The relative efficacy of videotape feedback and coaching in shaping assertive behavior (Doctoral dissertation, Kent State University, 1976). Dissertation Abstracts International, 1976, 37, 6346B. (University Microfilms No. 77-12438)

Rich, A. R., & Schroeder, H. E. Research issues in assertiveness training. Psychological Bulletin, 1976, 83, 1081-1096.

- Rimm, D. C., Hill, G. A., Brown, N. N., & Stuart, J. E. Group assertive training in treatment of expression of inappropriate anger. Psychological Reports, 1974, 34, 791-798.
- Rosenthal, R. Combining results of independent studies. Psychological Bulletin, 1978, 85, 185-193.
- Rosenthal, R. The file drawer problem and tolerance for null results. Psychological Bulletin, 1979, 86, 638-641.
- Russell, A., & Winkler, R. Evaluation of assertive training and homosexual guidance service groups designed to improve homosexual functioning. Journal of Consulting and Clinical Psychology, 1977, 45, 1-13.
- Salter, A. Conditioned reflex therapy. New York: Capricorn, 1949.
- Sanchez, U. C., Lewinsohn, P. M., & Larson, D. W. Assertion training: Effectiveness in the treatment of depression. Journal of Clinical Psychology, 1980, 36, 526-529.
- Scherer, S. E., & Freedberg, E. J. Effects of group videotape feedback on development of assertiveness skills in alcoholics: A follow-up study. Psychological Reports, 1976, 39, 983-992.
- Schwartz, R., & Gottman, J. Toward a task analysis of assertive behavior. Journal of Consulting and Clinical Psychology, 1978, 44, 910-920.
- Serber, M. Teaching the nonverbal components of assertive training. Journal of Behavior Therapy and Experimental Psychiatry, 1972, 3, 179-183.
- Serber, M., & Nelson, P. The ineffectiveness of systematic desensitization and assertive training in hospitalized schizophrenics. Journal of Behavior Therapy and Experimental Psychiatry, 1971, 2, 107-109.
- Smith, M. L. Sex bias in counseling and psychotherapy. Psychological Bulletin, 1980, 87, 392-407.
- Smith, M. L., & Glass, G. U. Meta-analysis of psychotherapy outcome studies. American Psychologist, 1977, 32, 752-760.
- Smith, M. L., Glass, G. U., & Miller, T. I. The benefits of psychotherapy. Baltimore: Johns Hopkins University Press, 1980.
- Snyder, O. W. Assertiveness training: A comparison of behavior rehearsal, modeling, and silent reading and the relationship of training to selected self report inventories (Doctoral dissertation, West Virginia University, 1973). Dissertation Abstracts International, 1973, 33, 6094B. (University Microfilms No. 73-12978)

- Springer-Moore, D. M., & Jack, G. B. Assertive behavior training: A cross-referenced annotated bibliography. San Luis O'bispo, California: Impact, 1981.
- Steel, C. M. The effects of group assertive skill training on the development, maintenance, and generalization of assertive skills in unassertive female undergraduates (Doctoral dissertation, University of Missouri, 1977). Dissertation Abstracts International, 1977, 37, 5616A. (University Microfilms No. 77-05660)
- Stock, W. A., Okun, M. A., Haring, M. J., Miller, W., Kinney, C., & Ceurvorst, R. W. Rigor in data synthesis: A case study of reliability in meta-analysis. Educational Researcher, 1982, 11, 10-14.
- Thelen, M. H., & Lasoski, M. C. The separate and combined effects of focusing information and videotape self-confrontation feedback. Journal of Behaviour Therapy and Experimental Psychiatry, 1980, 11, 173-178.
- Thibodeau, P. A. The effects of short-term assertiveness training on selected counselors (Doctoral dissertation, University of South Carolina, 1974). Dissertation Abstracts International, 1975, 36, 718A. (University Microfilms No. 75-16499)
- Thorpe, G. L. Desensitization, behavior rehearsal, self-instructional training and placebo effects on assertive refusal behavior. European Journal of Behavior Analysis and Modification, 1975, 1, 30-44.
- Tiegerman, S., & Kassinove, H. Effects of assertive training and cognitive components of rational therapy on assertive behaviors and interpersonal anxiety. Psychological Reports, 1977, 40, 535-542.
- Twentyman, C. T., Gibraltar, J. C., & Inz, J. M. Multimodal assessment of rehearsal treatments in an assertion training program. Journal of Counseling Psychology, 1979, 26, 384-389.
- Uguroglu, M. E., & Wahlberg, H. J. Motivation and achievement: A quantitative synthesis. American Educational Research Journal, 1979, 16, 375-389.
- Vorgin, D., & Kassinove, H. Effects of behavior rehearsal, audiotaped observation, and intelligence on assertiveness and adjustment in third-grade children. Psychology in the Schools, 1979, 16, 427-429.
- Voss, J. R., Arrick, M. C., & Rimm, D. C. Behavior rehearsal, modeling, and coaching in assertive training. Behavior Therapy, 1978, 9, 970-971.

- Wall, K. E. Effects of all female and mixed sex assertion training groups on the assertive behavior of females (Doctoral dissertation, University of Miami, 1977). Dissertation Abstracts International, 1977, 38, 6184B. (University Microfilms No. 78-08257)
- Wallace, C. J., Teigen, J. R., Liberman, R. P., & Baker, U. Destructive behavior treated by contingency contracts and assertive training: A case study. Journal of Behavior Therapy and Experimental Psychiatry, 1973, 4, 273-274.
- ✓ Wehr, S. H. The effects of assertive training on the performance of highly anxious adolescents (Doctoral dissertation, Georgia State University, 1978). Dissertation Abstracts International, 1978, 39, 2189A-2190A. (University Microfilms No. 78-17586)
- Weinman, B., Gelbart, P., Wallace, M., & Post, M. Inducing assertive behavior in chronic schizophrenics: A comparison of socioenvironmental, desensitization and relaxation therapies. Journal of Consulting and Clinical Psychology, 1972, 39, 246-252.
- Weiskott, G. N., & Clelland, C. C. Assertiveness, territoriality, and personal space behavior as a function of group assertion training. Journal of Counseling Psychology, 1977, 24, 111-117.
- Wolfe, J. L., & Fodor, I. G. Modifying assertive behavior in women: A comparison of three approaches. Behavior Therapy, 1977, 8, 567-574.
- Wolpe, J. Psychotherapy by reciprocal inhibition. Stanford, California: Stanford University Press, 1958.
- Wolpe, J. The practice of behavior therapy (2nd ed.). New York: Pergamon Press, 1973.
- Wolpe, J., & Lazarus, A. A. Behavior therapy techniques: A guide to the treatment of neuroses. New York: Pergamon Press, 1966.
- Young, E. R., Rimm, D. C., & Kennedy, T. D. An experimental investigation of modeling and verbal reinforcement in the modification of assertive behavior. Behavior Research and Therapy, 1973, 11, 317-319.

BIOGRAPHICAL SKETCH

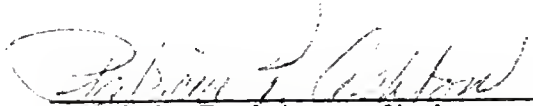
Mark Allen Shatz was born on April 7, 1955, in Chicago, Illinois. He was raised in Chicago and attended elementary and secondary school there.

After attending the University of Illinois in Chicago for one year, Mark transferred to Eastern Illinois University. At Eastern, Mark completed undergraduate and graduate work in psychology.

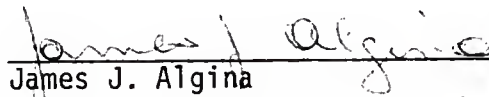
With a master's degree in school psychology, Mark proceeded to complete an internship in school psychology in Mundelein, Illinois. Mark was then asked to return to Eastern as a member of the psychology department, where he taught for two years.

In the fall of 1980, Mark entered the doctoral program in educational psychology at the University of Florida. After graduation, Mark plans to seek employment as an assistant professor in a university setting.

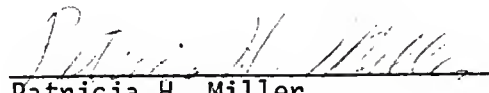
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of Education

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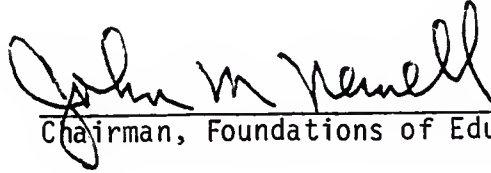

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This dissertation was submitted to the Graduate Faculty of the Department of Foundations of Education in the College of Education and to the Graduate Council, and was accepted as partial fulfillment of the requirements for the degree of Doctor of Philosophy.

April, 1983


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